

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 60

[AD-FRL-_____]

RIN 2060-AG31

Standards of Performance for New Stationary Sources and
Emission Guidelines for Existing Sources:
Commercial and Industrial Solid Waste Incineration Units

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed standards and guidelines.

SUMMARY: The EPA is proposing standards and guidelines for new and existing commercial and industrial solid waste incineration (CISWI) units. The standards and guidelines fulfill the requirements of sections 111 and 129 of the Clean Air Act (CAA) which require EPA to promulgate standards and guidelines for solid waste incineration units. These requirements are based on the Administrator's determination that these waste incinerators cause, or contribute significantly to, air pollution that may reasonably be anticipated to endanger public health or welfare. These standards and guidelines will protect public health by reducing exposure to air pollution. These regulations address only nonhazardous wastes.

DATES: Comments. Comments on the proposed standards and guidelines or on the Information Collection Request (ICR)

document associated with these standards and guidelines must be received on or before [insert the date 60 days after publication in the FEDERAL REGISTER].

Public Hearing. The EPA will hold a public hearing if individuals request to speak. Persons wishing to speak at a public hearing must contact EPA by [insert the date 20 days after publication in the FEDERAL REGISTER]. If the EPA receives requests to speak, the hearing will take place on [insert the date 30 days after publication in the FEDERAL REGISTER].

ADDRESSES: Comments. Submit comments (in duplicate, if possible) to: The Air and Radiation Docket and Information Center, Attn: Docket No. A-94-63 (industrial and commercial waste incineration), U.S. Environmental Protection Agency, 401 M Street, SW, Washington, DC 20460.

SUPPLEMENTARY INFORMATION:

Comment Information. Comments may be submitted electronically via electronic mail (e-mail) or on disk. Electronic comments on this proposed rule may be filed via e-mail at most Federal Depository Libraries. E-mail submittals should be sent to: "A-and-R-Docket@epamail.epa.gov". Electronic comments must be submitted as an American Standard Code for Information Interchange (ASCII) file avoiding the use of special characters or any form of encryption. Comments and data

will also be accepted on disks or as an e-mail attachment in WordPerfect® 5.1, 6.1, or Corel 8.0 file format or ASCII file format. All comments and data for this proposal, whether in paper form or electronic forms such as through e-mail or on diskette, must be identified by Docket No. A-94-63. No confidential business information should be submitted through e-mail.

Persons wishing to submit proprietary information for consideration must clearly distinguish such information from other comments by clearly labeling it "Confidential Business Information" (CBI). Submit CBI directly to the following address, and not to the public docket, to ensure that proprietary information is not inadvertently placed in the docket: Attention: Mr. Rick Crume, c/o Ms. Melva Toomer, OAQPS Document Control Officer, 411 W. Chapel Hill Street, Room 740B, Durham, North Carolina 27701. Information covered by such a claim of confidentiality will be disclosed by the EPA only to the extent allowed and by the procedures set forth in 40 CFR part 2. If no claim of confidentiality is made with the submission, the submission may be made available to the public without further notice.

Public Hearing. If a public hearing is held, it will be held at EPA's Office of Administration Auditorium, Research Triangle Park, NC, or at an alternate site nearby. Persons wishing to speak at a public hearing should contact

Libby Bradley, Combustion Group, Emission Standards Division (MD-13), U.S. EPA, Research Triangle Park, North Carolina 27711, (919) 541-5578.

Background Information. A list of combustion related rules is available on the Combustion Group website on the EPA Technology Transfer Network website (TTN Web) at <http://www.epa.gov/ttn/uatw/combust/list.html>. You may obtain background information, technical documents, and a docket index on these combustion related rules.

Docket. Docket No. A-94-63 contains the supporting information used in developing the proposed standards and guidelines and is available for public inspection and copying between 8:00 a.m. and 5:30 p.m., Monday through Friday, at the Air and Radiation Docket and Information Center, U.S. Environmental Protection Agency, 401 M Street, SW., Washington, DC 20460, telephone (202) 260-7548, fax (202) 260-4000. The docket is available at the above address in Room M-1500, Waterside Mall (ground floor, central mall). A reasonable fee may be charged for copying. FOR FURTHER INFORMATION CONTACT: Rick Crume, Combustion Group, Emission Standards Division (MD-13), U.S. EPA, Research Triangle Park, North Carolina 27711, (919) 541-5294, e-mail: crume.rick@epa.gov.

Regulated Entities. The promulgation of these standards and guidelines would affect the following North

American Industrial Classification System (NAICS) and
Standard Industrial Classification (SIC) codes:

Category	NAICS Code	SIC Code	Examples of potentially regulated entities
Any industry using a solid waste incinerator as defined in the regulations	325	28	Manufacturers of chemicals and allied products
	325	34	Manufacturers of electronic equipment
	421	36	Manufacturers of wholesale trade, durable goods
	321, 337	24, 25	Manufacturers of lumber and wood furniture
Any State, local, or Tribal government using a solid waste incinerator as defined in the regulations	922	9229	Law enforcement agencies
Any Federal government agency using a solid waste incinerator as defined in the regulations	928	9711	Department of defense (labs, military bases, munition facilities)
Any university using a solid waste incinerator as defined in the regulations	6113	8221	Research centers

This table is not intended to be exhaustive, but rather provides a guide for readers regarding entities likely to be regulated by this action. This table lists examples of the types of entities that EPA is now aware could potentially be regulated by this action. Other types of entities not listed in this table could also be affected. To determine

whether your facility, company, business organization, etc., is regulated by this action, you should carefully examine the applicability criteria in 40 CFR 60.2010 of subpart CCCC and 40 CFR 60.2505 of subpart DDDD. If you have any questions regarding the applicability of this action to your solid waste incineration unit, refer to the "FOR FURTHER INFORMATION CONTACT" section.

Organization of This Document. The following outline is provided to aid in locating information in this preamble. Each section heading of the preamble is presented as a question and the text in the section answers the question.

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Abbreviations and Acronyms Used in This Document.

ASCII

American Standard Code for Information Interchange

ASME	American Society of Mechanical Engineers
Btu	British thermal units
CBI	Confidential Business Information
CAA	Clean Air Act
CEMS	continuous emission monitoring systems
CFR	Code of Federal Regulations
CISWI	commercial and industrial solid waste incineration
EPA	Environmental Protection Agency
FACA	Federal Advisory Committee Act
FR	Federal Register
HMIWI	hospital/medical/infectious waste incineration
ICCR	Industrial Combustion Coordinated Rulemaking
ICR	Information Collection Request
kg/hr	kilograms per hour
kWh/yr	kilowatt hours per year
lbs/hr	pounds per hour
MACT	maximum achievable control technology
mg/dscm	milligrams per dry standard cubic meter
Mg/yr	megagrams per year
MWC	municipal waste combustor
NAICS	North American Industrial Classification System
ng/dscm	nanograms per dry standard cubic meter
NSPS	new source performance standards

NTTAA	National Technology Transfer and Advancement Act
OMB	Office of Management and Budget
Pub. L.	Public Law
ppm	parts per million
RFA	Regulatory Flexibility Act
SBREFA	Small Business Regulatory Enforcement Fairness Act
SIC	Standard Industrial Classification
SWDA	Solid Waste Disposal Act
TTN Web	Technology Transfer Network Website
UMRA	Unfunded Mandates Reform Act
U.S.C.	United States Code

I. Background Information

A. What information is covered in this preamble and how is it organized?

In this preamble, EPA summarizes the important features of these proposed standards and guidelines that apply to CISWI units. This preamble describes the environmental, energy, and economic impacts of these standards and guidelines; describes the basis for each of the decisions made regarding the proposed standards and guidelines; requests public comments on certain issues; and discusses administrative requirements relative to this action.

B. Where in the Code of Federal Regulations will these standards and guidelines be codified?

The Code of Federal Regulations (CFR) is a codification of the general and permanent rules published in the Federal Register by the Executive departments and agencies of the Federal Government. The code is divided into 50 titles that represent broad areas subject to Federal regulation. These proposed rules for solid waste incineration units would be published in Title 40, Protection of the Environment. Part 60 of title 40 includes standards of performance for new stationary sources and emission guidelines and compliance times for existing sources. The table below lists the subparts in which the standards and guidelines will be codified.

Title of the Regulation	Subpart in title 40, part 60
Standards of Performance for New Stationary Sources: Commercial and Industrial Solid Waste Incineration Units	Subpart CCCC
Emission Guidelines and Compliance Times for Commercial and Industrial Solid Waste Incineration Units	Subpart DDDD

C. What is the regulatory development background of this source category?

Section 129 of the CAA requires the EPA to develop new source performance standards (NSPS) and emission guidelines for "solid waste incineration units combusting commercial or industrial waste." On December 28, 1994 (59 FR 66850), the

EPA published an advance notice of proposed rulemaking. That notice requested information and data concerning the operation, location, emissions, and emission controls for CISWI units. The data from that information request were compiled by the EPA to assist in identifying and characterizing CISWI units.

In September 1996, the EPA chartered the Industrial Combustion Coordinated Rulemaking (ICCR) advisory committee under the Federal Advisory Committee Act (FACA). The committee's objective was to develop recommendations for regulations for several combustion source categories under sections 112 and 129 of the CAA. The ICCR advisory committee, known as the Coordinating Committee, formed Source Work Groups for the various combustor types covered under the ICCR. One work group, the Incinerator Work Group, was formed to research issues related to CISWI units. The Incinerator Work Group submitted recommendations, information, and data analysis results to the Coordinating Committee, which in turn considered them and submitted recommendations and information to the EPA. The Committee's recommendations were considered by EPA in developing these regulations for CISWI units. The Committee's 2-year charter expired in September 1998.

Pursuant to a February 1995 consent decree (as modified in July 1997), EPA was required to complete the entry of

responses received from an ICR (issued by the ICCR) into an electronic database by October 15, 1997, and to develop regulatory options for the CISWI rulemaking by November 16, 1998. The EPA met both of these deadlines. That consent decree also requires the Administrator to sign a notice of proposed rulemaking to establish emission standards and other requirements applicable to commercial and industrial solid waste incinerators, pursuant to section 129 of the CAA, by November 15, 1999. Additionally, a July 23, 1997 consent decree requires the EPA to promulgate final emission standards and other requirements for CISWI units, pursuant to section 129, by November 15, 2000.

This proposed rule satisfies the consent decree requirement for the Administrator to sign a notice of proposed rulemaking for emission standards applicable to CISWI units by November 15, 1999.

D. What is the statutory authority for these standards?

Section 129 of the CAA requires EPA to develop and adopt performance standards and emission guidelines for solid waste incineration units pursuant to section 111 of the CAA. Section 111(b) requires EPA to establish standards of performance for new sources, and section 111(d) requires EPA to establish procedures for States to submit plans for implementing emission guidelines for existing sources. Under section 111, performance standards and guidelines must

be developed for new and existing stationary sources that cause or contribute significantly to air pollution that may reasonably be anticipated to endanger public health or welfare.

Congress specifically added section 129 to the CAA to address concerns about emissions from solid waste combustion units. Under section 129, the standards and guidelines adopted for solid waste combustion units must reflect maximum achievable control technology (MACT). The MACT is the maximum degree of reduction in emissions of specified air pollutants that the Administrator determines is achievable, taking into consideration the cost of achieving the reductions and any non-air quality health and environmental impacts and energy requirements.

E. What are new source performance standards?

The NSPS for solid waste incineration units are developed according to sections 111 and 129. These standards apply to new stationary sources of emissions, that is, sources whose construction begins after a standard is proposed or that are modified on or after a specified date. An NSPS is the end product of a series of decisions related to certain key elements for the source category being considered for regulation. The key elements in this rulemaking are generally defined as:

1. Source category to be regulated means the

industries or types of processes that are regulated. Today's proposed standards apply to the CISWI category specified in section 129.

2. Affected facility means the solid waste incineration units that will be sources subject to the NSPS. Today's proposed standards will affect each individual CISWI unit.

3. Pollutants to be regulated means the particular substances emitted by the affected facility that the standards regulate. Section 129 specifies nine pollutants: cadmium, carbon monoxide, dioxins/furans, fine and total particulate matter, hydrogen chloride, lead, mercury, oxides of nitrogen, and sulfur dioxide. Opacity standards may also be required as appropriate. The EPA is not proposing emission limits for fine particulate matter because testing and monitoring methods are not available. The section 129 pollutants represent the minimum requirements; EPA can add other pollutants, if appropriate, but has elected not to do so in this rulemaking.

4. Maximum achievable control technology means the technology on which the emission standards will be based. Section 129(a)(2) specifies that standards be based on "the maximum degree of reduction in emissions . . . that the Administrator, taking into consideration the cost of achieving such emission reduction, and any non-air quality

health and environmental impacts and energy requirements, determines is achievable" (Note that solid waste incineration standards under section 129 are different from typical NSPS under section 111, which are based on "best demonstrated technology" rather than MACT.)

5. Format for the standards means the form in which the standards are expressed; for example, as pollutant concentration emission limits, as a percent reduction in emissions, or as equipment or work practice standards. Section 129 also directs EPA to establish siting requirements for new incineration units and operator certification and training requirements for all units.

6. Actual standards generally means emission limits based on the level of reduction that the MACT can achieve. Under certain circumstances, it may not be possible to develop emission limits if the level of performance cannot be identified. Only in unusual cases do standards require that a specific technology be used. In general, the source owner or operator may select any method for complying with the standards.

7. Other considerations in addition to emission limits for NSPS usually include: standards for visible emissions, modification and reconstruction provisions, monitoring requirements, performance test methods and compliance procedures, and reporting and recordkeeping requirements.

F. What are emission guidelines?

Emission guidelines are similar to the NSPS, except that they apply to existing sources, that is, sources whose construction begins on or before the date a standard is proposed or that are modified before a specified date. Unlike NSPS, the emission guidelines are not enforceable until EPA approves a State plan or adopts a Federal plan for implementing and enforcing them, and the State or Federal plan becomes effective.

G. How are the emission guidelines implemented?

When standards of performance for solid waste incineration units are promulgated under sections 111 and 129, the CAA requires States under sections 111(d) and 129(b) to submit plans that: (1) establish emission standards for existing sources and (2) provide for implementation and enforcement of these emission standards.

States are required to adopt and submit to the Administrator a State plan implementing the emission guidelines within 1 year after the promulgation of the guidelines (section 129(b)(2)). The State plan carries out and provides for enforcing the emission guidelines. Section 129 provides that the State plan for existing incineration units must be at least as protective as the emission guidelines and must provide for compliance by affected facilities no later than 3 years after the

Administrator approves the State plan, but no later than 5 years after EPA promulgates the guidelines. The CAA (section 111(d)) further requires that the procedures for submitting a State plan must be similar to the procedures for submitting State implementation plans under section 110 of the CAA. (The EPA has established specific procedures in 40 CFR part 60, subpart B.) Sections 111(d) and 129(b) also require EPA to develop, implement, and enforce a Federal plan if a State fails to submit a satisfactory State plan.

II. Summary of the Standards and Guidelines

This preamble discusses the proposed standards and guidelines as they apply to "you," the owner or operator of a new or existing CISWI unit. This preamble describes the major requirements of the CISWI regulations. For a full description of the proposed requirements and compliance times, see the attached regulations.

A. Do the proposed standards and guidelines apply to me?

The proposed standards and guidelines apply to you if you own or operate an incineration unit burning solid waste (as defined in §§60.2245 and 60.2850) at any commercial or industrial facility. A commercial or industrial solid waste incineration unit is considered an enclosed device using controlled flame combustion that burns solid waste, or an air curtain incinerator that burns solid waste, and that is a distinct operating unit of any commercial or industrial

facility. Note that the definition of solid waste includes solid, liquid, semisolid, or contained gaseous materials.

Incineration units that burn more than 90 percent by weight (on an instantaneous basis) pathological waste or agricultural waste (as defined in §§60.2245 and 60.2850) are not covered by the proposed standards and guidelines. Additionally, incineration units that are regulated under any of the following existing standards or guidelines are not covered by the proposed standards or guidelines:

- Subpart Cb of this part (Emission Guidelines and Compliance Times for Municipal Waste Combustors That are Constructed on or Before December 19, 1995)
- Subpart Ce of this part (Emission Guidelines and Compliance Times for Hospital/Medical/Infectious Waste Incinerators)
- Subpart Ea of this part (Standards of Performance for Municipal Waste Combustors)
- Subpart Eb of this part (Standards of Performance for Municipal Waste Combustors for Which Construction is Commenced After September 20, 1994)
- Subpart Ec of this part (Standards of Performance for Hospital/Medical/Infectious Waste Incinerators for Which Construction is Commenced After June 20,

1996)

- Subpart AAAA of this part (Standards of Performance for New Stationary Sources: Small Municipal Waste Combustion Units)
- Subpart BBBB of this part (Emission Guidelines: Small Municipal Waste Combustion Units)

Section 129(g)(1) of the CAA excludes the following incineration units from the definition of a solid waste incineration unit:

- Incinerators or other units required to have a permit under section 3005 of the Solid Waste Disposal Act (e.g., hazardous waste incinerators).
- Materials recovery facilities (including primary or secondary smelters) which combust waste for the primary purpose of recovering metals.
- Qualifying small power production facilities, as defined in section 3(17)(C) of the Federal Power Act (16 U.S.C. 769(17)(C)), or qualifying cogeneration facilities, as defined in section 3(18)(B) of the Federal Power Act (16 U.S.C. 796(18)(B)), which burn homogeneous waste (such as units which burn tires or used oil, but not including refuse-derived fuel) for the production of electric energy or in the case of qualifying cogeneration facilities which burn homogeneous

waste for the production of electric energy and steam or forms of useful energy (such as heat) which are used for industrial, commercial, heating or cooling purposes.

Therefore, these units are not covered by the proposed standards and guidelines. The CAA also specifies that air curtain incinerators that burn 100 percent wood waste and clean lumber and that comply with opacity limitations established by the Administrator are excluded from the definition of solid waste incineration unit. Therefore, the requirements for air curtain incinerators that burn 100 percent wood waste and clean lumber are limited to opacity limits and associated recordkeeping and reporting requirements.

If you began the construction of your unit on or before [insert date published in the FEDERAL REGISTER] it is considered an existing unit and is subject to the emission guidelines. If you began the construction of your unit after [insert date published in the FEDERAL REGISTER] it is considered a new unit and is subject to the NSPS. If you began reconstruction or modification of your unit prior to 6 months after promulgation of the rule it is considered an existing unit and is subject to the emission guidelines. Likewise, if you began reconstruction or modification of your unit 6 months (or later) after promulgation of this

subpart it is considered a new unit and is subject to the NSPS.

B. What emission limits must I meet?

As the owner or operator of a new or existing CISWI unit, you would be required to meet the emission limits specified in table 1. You must do a stack test to show compliance within 60 days after a new CISWI unit reaches the charge rate at which it will operate, but no later than 180 days after the unit's initial start-up. As the owner or operator of an existing CISWI unit, you would be required to meet the emission limits specified in table 1 within 3 years after the Administrator approves the State plan or promulgates a Federal plan. Each existing CISWI unit must be in compliance with these emission guidelines within 5 years of promulgation of the guidelines.

TABLE 1. EMISSION LIMITS FOR NEW AND EXISTING CISWI UNITS

For these pollutants	You must meet these emission limits ^a	And determine compliance using these methods
Cadmium	0.03 mg/dscm	EPA Method 29
Carbon Monoxide	157 ppm by dry volume	Not required
Dioxins/Furans (total mass basis)	0.37 ng/dscm	EPA Method 23
Hydrogen Chloride	62 ppm by dry volume	EPA Method 26
Lead	2.1 mg/dscm	EPA Method 29
Mercury	0.005 mg/dscm	EPA Method 29
Opacity	10 percent	EPA Method 9
Oxides of Nitrogen	388 ppm by dry volume	Not required
Particulate Matter	70 mg/dscm	EPA Method 5 or 29

For these pollutants	You must meet these emission limits ^a	And determine compliance using these methods
Sulfur Dioxide	20 ppm by dry volume	EPA Method 6

^aAll emission limits are measured at 7 percent oxygen, dry basis at standard conditions.

C. What are the other requirements for new and existing units?

As the owner or operator of a new or existing CISWI unit, you would be required to meet the following additional requirements.

Waste Management Plan:

- Submit a written plan that identifies both the feasibility and the approach to separate certain components of solid waste from the waste stream to reduce toxic emissions from waste incineration.

Operator Training and Qualification Requirements:

- Qualify operators or their supervisors (at least one per facility) by ensuring that they complete the operator training course.
- Ensure that qualified operators or their supervisors complete an annual review or refresher course specified in the regulation.
- Maintain plant-specific information regarding operator training and update this information annually.

Compliance and Stack Testing Requirements:

- Conduct initial stack tests to determine compliance with the cadmium, dioxins/furans, hydrogen chloride, lead, mercury, opacity, particulate matter, and sulfur dioxide emission limits and establish operating parameters.
- Conduct annual stack tests to determine compliance with the particulate matter and hydrogen chloride emission limits and opacity limit. (An owner or operator may conduct less frequent testing if the facility demonstrates it is in compliance with the limits for 3 consecutive years.)
- Operate the unit and control equipment so that operating parameters do not exceed the established maximum values or fall below the established minimum values.

Monitoring Requirements:

- If using a wet scrubber to comply, install and maintain equipment to continuously monitor operating parameters including maximum charge rate, minimum pressure drop across the wet scrubber (or minimum horsepower or amperage), and scrubber liquid flow rate and pH.
- If something other than a wet scrubber is used to comply, establish and monitor other site-specific operating parameters, as approved by the

Administrator.

Recordkeeping and Reporting Requirements:

- Maintain for 5 years records of the initial stack tests and all subsequent stack tests, operating parameters, any maintenance, the siting analysis (for new units only), and operator training and qualification.
- Submit the results of the initial stack tests and all subsequent stack tests and values for the operating parameters.

D. What are the requirements for air curtain incinerators?

Air curtain incinerators operate by forcefully projecting a curtain of air across an open chamber or pit in which combustion occurs. These units can be constructed above or below ground and with or without refractory walls and floors. (Air curtain incinerators are not to be confused with conventional combustion devices with enclosed fireboxes and controlled air technology such as mass burn, modular, and fluidized bed combustors.) Under section 129(g)(1) of the CAA, new and existing air curtain incinerators that burn 100 percent wood wastes, yard wastes, and clean lumber are not required to comply with the proposed CISWI emission limits provided that such incinerators comply with opacity limitations to be established by the Administrator. Standards and guidelines

for municipal waste combustion (MWC) units establish air curtain incinerator opacity limits for yard wastes. This proposed rule establishes opacity limits for wood wastes and clean lumber.

The proposed opacity limit for air curtain incinerators burning 100 percent wood wastes and clean lumber is 10 percent, except 35 percent opacity is allowed during start-up periods that are within the first 30 minutes of operation. These requirements apply at all times except during malfunction, which must not exceed 3 hours. The proposed opacity limits are based on levels achievable by incineration devices burning materials such as municipal and medical waste. Initial and annual performance tests for opacity as well as recordkeeping are required.

III. Rationale of the Standards and Guidelines

A. How did EPA determine which pollution sources would be regulated under the proposed standards and guidelines?

The source category for the CISWI standards in subparts CCCC and DDDD is new and existing "solid waste incineration units combusting commercial or industrial waste," as required by section 129 of the CAA. The affected facility is each individual waste combustion unit.

The CISWI standards in subparts CCCC and DDDD apply to new and existing commercial and industrial waste incineration units that burns solid waste as defined in the

subparts. (Also, see section VI of this preamble.) To avoid any potential for overlapping regulations, incineration units are not covered under the CISWI standards if they are covered by regulations in 40 CFR part 60 for MWC units (subparts Cb, Ea, Eb, AAAA, and BBBB); or hospital/medical/infectious waste incineration (HMIWI) units (subparts Ce and Ec).

The CISWI standards also do not apply to incineration units that burn greater than 90 percent by weight pathological materials, including human remains, animal tissues, and any associated containers or bedding materials. The EPA selected a cutoff of 90 percent to distinguish those units designed and used primarily for pathological material destruction, including human cremation. Units that burn less than 90 percent pathological materials are covered under the CISWI standards. Additionally, the CISWI standards do not apply to incineration units that burn greater than 90 percent by weight agricultural wastes, including nut and grain hulls and chaff, bagasse, orchard prunings, corn stalks, coffee bean hulls and grounds, and other vegetative waste materials generated as a result of agricultural operations. The EPA selected a cutoff of 90 percent to distinguish those units designed and used primarily for agricultural material destruction.

The MACT floor and the proposed emission limits for

each of the nine pollutants and opacity in the CISWI category differ somewhat from limits established for other categories of incineration units, such as HMIWI units, MWC units, and hazardous waste incinerators. Such differences are to be expected since each category contains incineration units that differ from units in the other categories with respect to waste type, incinerator size and design, and emission control requirements. Each of these incinerator characteristics can have a significant impact on the emissions from an incinerator and, consequently, on the data upon which EPA must base its emission standards. Because of such differences, EPA has developed individual standards for each category of incinerators.

To clarify which solid waste incineration units are covered by section 129 regulations such as these CISWI standards and guidelines, the EPA is proposing today a definition of solid waste. The proposed definition is discussed in detail in section VI of this preamble. The proposed definition applies only to section 129 regulations. The definition does not affect any other regulations that control the combustion or disposal of solid waste, such as regulations that control emissions from burning hazardous waste or other regulations developed under the Resource Conservation and Recovery Act.

Categories may be divided into subcategories when

differences (such as design, fuel, or waste type, etc.) between given types of units lead to corresponding differences in the technical feasibility of applying emission control techniques. The design and operating information that EPA reviewed to date for CISWI units does not indicate the need for subcategorization of this category. For the CISWI category, no particular waste type appears to dominate a given design or size range, nor does waste type or size appear to determine the technical feasibility of control. While the CISWI database and the information collected suggest that we have considered all relevant CISWI units, we request comment on any classes or types of CISWI units, or CISWI unit size considerations, that we have not addressed in this proposed rule. Any comments regarding such units should include a discussion about how the units should be treated under this rulemaking.

B. How did EPA select the format for the proposed standards and guidelines?

The EPA selected emission limitations as the format for the proposed CISWI standards and guidelines. As required by section 129 of the CAA, the proposed standards and guidelines would establish numerical emission limitations for cadmium, carbon monoxide, dioxins/furans, hydrogen chloride, lead, mercury, opacity, oxides of nitrogen, particulate matter, and sulfur dioxide. For regulating

cadmium, lead, mercury, and total particulate matter, the EPA is proposing numerical concentration limits in milligrams per dry standard cubic meter (mg/dscm). The EPA is not proposing standards for fine particulate matter because monitoring and testing methods are not available.

Dioxins/furans emission limits are in units of total nanograms per dry standard cubic meter (ng/dscm), based on measuring emissions of each tetra- through octa-chlorinated dibenzo-p-dioxin and dibenzofuran and summing them. For carbon monoxide, hydrogen chloride, oxides of nitrogen, and sulfur dioxide, the proposed standards and guidelines are volume concentrations (parts per million (ppm) dry volume). Standards and guidelines for opacity are proposed on a percentage basis. All measurements are corrected to 7 percent oxygen to provide a common basis.

The EPA selected an outlet concentration format because outlet data are available for CISWI units using the control technologies that are the basis of the MACT emission limits. The individual limits reflect the achievable performance of CISWI units using these controls for each type of emission.

In addition to numerical emission limits, the CISWI standards include operator training and qualification provisions and siting requirements (for new sources only) as required by section 129. Owners or operators of a new CISWI unit must also prepare a waste management plan.

The EPA considered an alternative percent reduction format for some of the pollutants such as cadmium, dioxins/furans, hydrogen chloride, lead, mercury, and sulfur dioxide, but data were insufficient to determine the percent reductions the control devices achieve. Given the variability of waste materials combusted and the limited emission test data available on which to base the emission limits, it is possible that some CISWI units burning "dirtier" materials may have difficulty achieving the proposed emission limits, even when emission controls are applied. Consequently, EPA considered including with each of the emission limitations, alternative percent reduction requirements to ensure that the limits are technically achievable while still reducing emissions. However, data upon which to base percent reduction requirements were not available. Therefore, the EPA requests comments on the appropriateness of percent reduction requirements, any data upon which those requirements could be based, and any other emissions test data available for the MACT floor technologies applied to CISWI units. The EPA also requests comments on whether emission limits should be established for pollutants in addition to the nine pollutants plus opacity that are specified in section 129. Comments should include any emissions data or estimates.

C. How did EPA determine the proposed emission limits for

new units?

All standards established pursuant to section 129 of the CAA must reflect MACT, the maximum degree of reduction in emissions of air pollutants that the Administrator, taking into consideration the cost of achieving such emission reduction, and any non-air quality health and environmental impacts and energy requirements, determines is achievable for each category. The CAA also specifies that the degree of reduction in emissions that is deemed achievable for new CISWI units must be at least as stringent as the emissions control that is achieved in practice by the best-controlled similar unit. This requirement constitutes the MACT "floor" for new CISWI units. However, the EPA may not consider costs or other impacts in determining the MACT floor. The EPA may require a control option that is more stringent than the floor (beyond the floor) if the Administrator considers the cost, environmental, and energy impacts to be reasonable.

1. How did EPA determine the MACT floor?

To determine the MACT floor for new CISWI units, the EPA examined the database of CISWI units recommended by the ICCR FACA Committee. Data for units not meeting the definition of a CISWI unit were removed from the database, and information on other CISWI units, obtained after expiration of the ICCR FACA, was added to supplement the

FACA recommendation. The EPA next identified the types of air pollution controls currently used by existing CISWI units and ranked those controls according to their effectiveness in removing the pollutants of concern. Emissions data were available for only a limited number of units, so the EPA ranked the technologies based upon emission reduction information in the literature and engineering judgement.

Based on the emission reduction potential of existing air pollution controls, the EPA listed all the CISWI units in the database in order of decreasing control device effectiveness. The EPA determined the MACT technology basis of the floor for each pollutant by identifying the best-controlled unit on a pollutant-by-pollutant basis. Thus, for each pollutant, the basis for the MACT floor for new units is the technology used by the best-performing unit.

After establishing the technology basis for the floor, the EPA examined the emissions data available for CISWI units controlled by that technology to determine appropriate emission limits. The resulting emission limits associated with the MACT floor technology for each pollutant represent the maximum concentration of emissions reported for the given pollutant/control technology combination. This approach is designed to ensure that units using the MACT floor technology could achieve the proposed emission limits

under the worst reasonable, foreseeable circumstances (i.e., a lower level could not be demonstrated to be consistently achievable).

The EPA's review of emissions data indicates that some CISWI units may be able to meet the floor emission levels without using the air pollution control technology representing the basis of the floor. This is to be expected, given the wide variety of waste materials combusted by CISWI units and the resulting variability in emissions. Thus, units combusting "cleaner" materials may be able to achieve the emission limits without the need for control devices. (Under the CAA, facilities are allowed to use any means to achieve emission limits and do not need to rely on the specific technology on which the limits are based.)

The most effective technologies identified for removing particulate matter are fabric filters and wet scrubbers (i.e., units having these controls represent the best-controlled similar units for the purpose of determining the floor for new units.) Emissions test data for CISWI units showed no significant difference in the outlet concentrations of particulate matter between units using fabric filters and units using wet scrubbers. Therefore, the EPA considers either a fabric filter or wet scrubber to be the MACT floor for particulate matter control.

Similarly, because non-volatile metals are captured in particulate form, the MACT floor for lead and cadmium also reflects a fabric filter or wet scrubber. The EPA determined that the MACT floor for dioxins/furans, hydrogen chloride, mercury, and sulfur dioxide reflects wet scrubbing. Fabric filters do not remove significant amounts of these pollutants, and no CISWI unit in the database reported using a fabric filter with carbon injection, which is a more effective technique for reducing dioxins/furans and possibly mercury emissions.

The EPA's experience is that for other combustion source categories, fabric filters and other control techniques such as electrostatic precipitators are capable of achieving particulate matter emission levels significantly lower than the proposed limit of 70 mg/dscm. Therefore, the EPA requests comments on whether fabric filters or other control techniques can achieve lower particulate matter emissions for CISWI units, and whether one of these techniques should represent the basis of the CISWI particulate matter emission limit. Comments should include any available information on emission rates, control efficiencies for particulate matter and other pollutants, and control costs for CISWI and similar units using control techniques capable of achieving particulate matter levels below 70 mg/dscm.

Data upon which to base emission limits for mercury and dioxins/furans are limited, and only two emission tests were available for each of these pollutants for CISWI units equipped with wet scrubbers. Therefore, the EPA requests comments on the proposed emission limits for mercury and dioxins/furans and requests additional emissions and control efficiency data applicable to CISWI units with wet scrubbers.

While the proposed mercury emission limit is based on data showing that units using wet scrubber control technology are able to meet the limit, this relatively low limit may be unachievable for incinerators burning wastes having relatively high amounts of water-insoluble mercury species (e.g., elemental mercury and mercury oxides). This is because a wet scrubber generally does not remove significant amounts of mercury species that are not soluble in water. In addressing other types of incinerators, such as MWC and HMIWI units, EPA has estimated that most of the mercury emitted from these facilities comprises water soluble species, such as mercury chloride, and that a small amount of the mercury emitted is not soluble in water. While units in the CISWI category may differ in some respects from MWC and HMIWI units, there are likely to be some similarities among the wastes burned by all of these units and the resulting emissions. Nevertheless, depending

on the nature of the waste combusted, the proposed mercury emission limits may not necessarily be achievable for all CISWI units using wet scrubbers.

The EPA believes that wet scrubbing can be an effective mercury removal technique for CISWI units, and that it is the appropriate control technology upon which to base the MACT floor. However, EPA requests comments on the emission limits for mercury and requests additional data (especially waste feed analyses and emission test data). Additionally, the EPA requests comments on whether CISWI units can meet the proposed mercury limit using wet scrubbers or pollution prevention techniques (e.g., removing mercury from the waste stream) regardless of the type of commercial and industrial waste burned.

Although some CISWI units appear to use combustion modification techniques to reduce oxides of nitrogen emissions, the limited available emissions data do not demonstrate associated reductions in oxides of nitrogen emissions, and none of the CISWI units reported the use of add-on controls for oxides of nitrogen. Similarly, many CISWI units are equipped with afterburners that may help to reduce carbon monoxide emissions. The emissions data, however, show no significant difference in carbon monoxide emissions between those units reporting afterburners and those that do not. Because oxides of nitrogen and carbon

monoxide controls have not been demonstrated on CISWI units, the MACT floor reflects no control of these pollutants. However, because the CAA requires EPA to set numerical emission limits for oxides of nitrogen and carbon monoxide, the limits corresponding to the MACT floor represent the highest uncontrolled emission rates for oxides of nitrogen and carbon monoxide in the emissions database. The EPA requests comments on these emission limits and whether these levels accurately reflect uncontrolled emissions of oxides of nitrogen and carbon monoxide from CISWI units.

2. How did EPA determine whether options more stringent than the floor were appropriate?

The EPA considered one regulatory option more stringent than the MACT floor (i.e., a technology basis that could result in lower emissions.) The system EPA evaluated comprised a fabric filter with carbon injection and a wet scrubber. Carbon injection would provide greater removal of dioxins/furans and possibly mercury, and the fabric filter would be required to collect the spent carbon. However, the incremental cost effectiveness of applying this dry/wet system for the pollutants of concern is considered excessive. (Incremental cost effectiveness is the difference in annual costs between this regulatory option and the MACT floor divided by the difference in annual emission reductions achieved. It is often used as a measure

of the economic feasibility of applying control techniques.)

The fabric filter with carbon injection and wet scrubber system considered by EPA represents the next logical step in improved emission control beyond wet scrubbing, and EPA was not able to identify other beyond the floor control systems that achieve good emission control at a reasonable cost effectiveness. However, EPA requests comments on whether other control technologies should be considered as beyond the floor regulatory options. Comments should include any information on emissions, current applications, and costs.

Because regulatory options that are more stringent than the floor and economically feasible were not identified, the EPA selected emission limits associated with the floors as MACT for each regulated pollutant. These emission limits are shown in table 1 in section II of this preamble.

D. How did EPA determine the proposed emission limits for existing units?

The CAA specifies in section 129 that MACT for existing CISWI units must be at least as stringent as the average emission limitation achieved by the best-performing 12 percent of units in the source category. This requirement constitutes the MACT floor for existing CISWI units. The EPA may not consider costs or other impacts in determining the MACT floor. A control option more stringent than the

floor can be required if the Administrator considers the cost, environmental, and energy impacts to be reasonable.

The process used to establish emission standards for existing CISWI units is virtually identical to the process used to establish standards for new CISWI units. Moreover, for each pollutant, the best-performing similar unit (used to establish the floor for new units) employs the same technology as the average of the best-performing 12 percent of units (used to establish the floor for existing units) in the CISWI category. Therefore, because the MACT floor emission limits for each pollutant for both new and existing CISWI units are based on the same pollution control efficiency of the same type of pollution control technology, the MACT floors (and resulting emission limits) for new and existing CISWI units are the same.

1. How did EPA determine the MACT floor?

To determine the MACT floor for existing CISWI units, the EPA first examined the database of CISWI units recommended by the ICCR FACA Committee. Data for units not meeting the definition of a CISWI unit were removed from the database, and information on other CISWI units, obtained after expiration of the ICCR FACA, was added to supplement the FACA recommendation. Next, the EPA identified the types of air pollution controls currently used by existing CISWI units and ranked those controls according to their

effectiveness in removing the pollutants of concern. Emissions data were available for only a limited number of units, so the EPA ranked the technologies based upon information about emission reduction in the literature and engineering judgement.

Based upon the emission reduction potential of available air pollution controls, the EPA listed all the CISWI units in the database in order of decreasing control device effectiveness. The EPA determined the technology basis of the MACT floor for each pollutant by identifying the best-performing 12 percent of the units on a pollutant-by-pollutant basis. The EPA then selected the median of the top 12 percent as the MACT floor.

After establishing the technology basis for the floor, the EPA examined the emissions data available for CISWI units controlled by that technology to determine achievable emission limits. The resulting emission limits associated with the MACT floors for each pollutant represent the maximum concentration of emissions reported for the given pollutant/control technology combination. This approach is designed to ensure that any units using the MACT floor technology could achieve the proposed emission limits under the worst reasonably foreseeable circumstances (i.e., a lower level could not be demonstrated to be consistently achievable).

The EPA's review of emissions data indicates that some CISWI units may be able to meet the floor emission levels without using the air pollution control technology representing the basis of the floor. This is to be expected, given the wide variety of waste materials combusted by CISWI units and the resulting variability in emissions. Thus, units combusting "cleaner" materials may be able to achieve the emission limits without the need for control devices. (Under the CAA, facilities are allowed to use any means to achieve emission limits and do not need to rely on the specific technology on which the limits are based.)

The most effective technologies identified for removing particulate matter are fabric filters and wet scrubbers. These techniques are used by over 20 percent of the units in EPA's CISWI database. Emissions test data for CISWI units showed no significant difference in the outlet concentrations of particulate matter between units using fabric filters and units using wet scrubbers. Therefore, the EPA considers either a fabric filter or wet scrubber to be the MACT floor for particulate matter control. Similarly, because non-volatile metals are captured in particulate form, the MACT floor for lead and cadmium also reflects a fabric filter or wet scrubber. Based on the median of the best-performing 12 percent of units, the EPA

determined that the MACT floor for dioxins/furans, hydrogen chloride, mercury, and sulfur dioxide reflects wet scrubbing. Fabric filters do not remove significant amounts of these pollutants, and no CISWI unit in the database reported using a fabric filter with carbon injection, which is a more effective technique for reducing dioxins/furans and possibly mercury emissions.

The EPA's experience is that for other combustion source categories, fabric filters and other control techniques such as electrostatic precipitators are capable of achieving particulate matter emission levels significantly lower than the proposed limit of 70 mg/dscm. Therefore, the EPA requests comments on whether fabric filters or other control techniques can achieve lower particulate matter emissions for CISWI units, and whether one of these techniques should represent the basis of the CISWI particulate matter emission limit. Comments should include any available information on emission rates, control efficiencies for particulate matter and other pollutants, and control costs for CISWI and similar units using control techniques capable of achieving particulate matter levels below 70 mg/dscm.

Data upon which to base emission limits for mercury and dioxins/furans are limited, and only two emission tests were available for each of these pollutants for CISWI units

equipped with wet scrubbers. Therefore, the EPA requests comments on the proposed emission limits for mercury and dioxins/furans and requests additional emission and control efficiency data applicable to CISWI units with wet scrubbers.

While the proposed mercury emission limit is based on data showing that units using wet scrubber control technology are able to meet the limit, this relatively low limit may be unachievable for incinerators burning wastes having relatively high amounts of water-insoluble mercury species (e.g., elemental mercury and mercury oxides). This is because a wet scrubber generally does not remove significant amounts of mercury species that are not soluble in water. In addressing other types of incinerators, such as MWC and HMIWI units, EPA has estimated that most of the mercury emitted from these facilities comprises water soluble species, such as mercury chloride, and that a small amount of the mercury emitted is not soluble in water. While units in the CISWI category may differ in some respects from MWC and HMIWI units, there are likely to be some similarities among the wastes burned by all of these units and the resulting emissions. Nevertheless, depending on the nature of the waste combusted, the proposed mercury emission limits may not necessarily be achievable for all CISWI units using wet scrubbers.

The EPA believes that wet scrubbing can be an effective mercury removal technique for CISWI units, and that it is the appropriate control technology upon which to base the MACT floor. However, EPA requests comments on the emission limits for mercury and requests additional data (especially waste feed analyses and emission test data). Additionally, the EPA requests comments on whether CISWI units can meet the proposed mercury limit using wet scrubbers or pollution prevention techniques (e.g., removing mercury from the waste stream) regardless of the type of commercial and industrial waste burned.

Although some CISWI units appear to use combustion modification techniques to reduce oxides of nitrogen emissions, the limited available emissions data do not demonstrate associated reductions in oxides of nitrogen emissions, and none of the CISWI units reported the use of add-on controls for oxides of nitrogen. Similarly, many CISWI units are equipped with afterburners that may help to reduce carbon monoxide emissions. The emissions data, however, show no significant difference in carbon monoxide emissions between those units reporting afterburners and those that do not. Because oxides of nitrogen and carbon monoxide control has not been demonstrated on CISWI units, the MACT floor reflects no control of these pollutants. However, because the CAA requires EPA to set numerical

emission limits for oxides of nitrogen and carbon monoxide, the limits corresponding to the MACT floor represent the highest uncontrolled emission rates of oxides of nitrogen and carbon monoxide in the emissions database. The EPA requests comments on these emission limits and whether these levels accurately reflect uncontrolled emissions of oxides of nitrogen and carbon monoxide from CISWI units.

2. How did EPA determine whether options more stringent than the floor were appropriate?

The EPA considered one regulatory option more stringent than the MACT floor (i.e., a technology basis that could result in lower emissions). The system that EPA evaluated comprised a fabric filter with carbon injection and a wet scrubber. Carbon injection would provide greater removal of dioxins/furans and possibly mercury, and the fabric filter would be required to collect the spent carbon. However, the incremental cost effectiveness of applying this dry/wet system for the pollutants of concern is considered excessive. (Incremental cost effectiveness is the difference in annual costs between this regulatory option and the MACT floor divided by the difference in annual emission reductions achieved. It is often used as a measure of the economic feasibility of applying control techniques.)

The fabric filter with carbon injection and wet scrubber system considered by EPA represents the next

logical step in improved emission control beyond wet scrubbing, and EPA was not able to identify other beyond the floor control systems that achieve good emission control at a reasonable cost effectiveness. However, EPA requests comments on whether other control technologies should be considered as beyond the floor regulatory options. Comments should include any information on emissions, current applications, and costs.

E. How did EPA determine testing and monitoring requirements for the emission standards and guidelines?

The EPA determined testing and monitoring for the emission standards and guidelines that are consistent with the CAA. Section 129(c) of the CAA requires the EPA to develop regulations that include monitoring and testing requirements. The purpose of these requirements is to allow the EPA to determine whether a source is operating in compliance with the regulations. The proposed CISWI monitoring and testing requirements are discussed below.

1. Continuous Emission Monitoring Systems

The most direct means of ensuring compliance with emission limits is the use of continuous emission monitoring systems (CEMS). As a matter of policy, the first and foremost option considered by the EPA is to require the use of CEMS to demonstrate continuous compliance with specific emission limits. The EPA considers other options only when

CEMS are not available or when the impacts of including such requirements are considered unreasonable. When monitoring options other than CEMS are considered, it is often necessary for the EPA to balance more reasonable costs against the quality or accuracy of the actual emissions monitoring data. Although monitoring of operating parameters cannot provide a direct measurement of emissions, it is often a suitable substitute for CEMS. The information provided can be used to ensure that the incinerator and associated air pollution control equipment are operating properly. This information reasonably assures the EPA and the public that the reductions envisioned by the regulations are being achieved.

The EPA evaluated the costs of applying CEMS to a CISWI unit. For a small (150 lbs/hr) batch-operated CISWI unit, the annual costs for operating CEMS for hydrogen chloride alone are approximately \$36,000. The annual costs of operating a wet scrubber, which represents MACT for new and existing CISWI units, are estimated to be about \$49,000. Thus, the costs of operating CEMS for just this one pollutant amount to over 70 percent of the costs of operating the wet scrubber. In addition, dioxins/furans and toxic metals are not directly measurable with CEMS, and CEMS for particulate matter and mercury have not been demonstrated in the United States for the purpose of

determining compliance. Consequently, the EPA considers CEMS an unreasonable monitoring option for CISWI units.

Because CEMS are not feasible, the proposed rules include requirements for annual stack testing using EPA methods, coupled with monitoring of operating parameters. The annual testing will ensure, on an ongoing basis, that the air pollution control device is operating properly and that its performance has not deteriorated. The owner or operator may skip two annual tests for a pollutant if all stack tests over the 3 previous years show compliance with the emission limit for that pollutant.

The majority of emission tests upon which the proposed emission limits are based were conducted using approved EPA test methods. Therefore, the EPA proposes that EPA test methods be followed when performing any emission testing required to determine compliance with the emission limits. This requirement will ensure that compliance testing follows the same procedures used to generate the emissions data upon which the emission limits in the proposed regulations were based. An average of three test runs would be required to determine compliance with the proposed regulations.

Parameter monitoring is also proposed on a rolling 3-hour basis to correspond to the approximate length of the required emission tests. The EPA selected parameters to monitor that indicate the proper operation of a wet scrubber

and that can be monitored continuously at a reasonable expense. Maximum and minimum values for the operating parameters must be established during emission testing. The maximum and minimum operating parameters are established by determining what range of operating parameter values represents good operation of the unit and control device and is necessary to achieve compliance with the proposed emission limits. The unit must then be operated within this range. An owner or operator of CISWI units that chooses to comply with the emission limits using controls other than wet scrubbers must propose for approval by the Administrator other operating parameters (such as temperature requirements for dry systems).

2. Stack Testing

The proposed rules require the owner or operator of each new and existing CISWI unit to perform an initial stack test for emissions of seven of the nine pollutants identified in section 129 of the CAA (cadmium, dioxins/furans, hydrogen chloride, lead, mercury, particulate matter, and sulfur dioxide), plus an initial opacity test. Two of the statutory pollutants (carbon monoxide and oxides of nitrogen) are excluded from the testing requirement because the control technology on which the floor is based does not significantly reduce emissions of these pollutants (see discussion in section III.C). The

owner or operator of each CISWI unit would use the initial stack test to calibrate the monitoring parameters as explained above. Additionally, the proposed rules require annual stack tests for particulate matter, hydrogen chloride, and opacity. (Annual testing for the other pollutants is not required.)

The annual testing will ensure, on an ongoing basis, that the air pollution control device is operating properly and its performance has not deteriorated without requiring the added expense of testing for every pollutant. Annual testing for the three pollutants is sufficient to demonstrate that the control device is operating properly and that compliance with the proposed emission limits is being achieved. The owner or operator may skip two annual tests for a pollutant if all stack tests over the previous 3 years show compliance with the emission limit for that pollutant. The EPA believes that testing every 3 years will provide sufficient certainty about control device performance while reducing the overall costs of testing to the regulated source.

The majority of emission tests upon which the proposed emission limits are based were conducted using approved EPA test methods. No applicable voluntary consensus standards were identified during the ICCR or during the subsequent development of this rulemaking. Therefore, the EPA proposes

that the identified EPA test methods be followed when performing any emission testing required to determine compliance with the emission limits. This requirement will ensure that compliance testing follows the same procedures used to generate the emission data upon which the emission limits in the proposed regulations are based.

F. How did EPA determine compliance times for the emission standards and guidelines?

Section 129(f) of the CAA specifies the dates by which affected or designated facilities must comply with the standards or guidelines, respectively. New units must be in compliance with the standards within 6 months after the date of promulgation or 6 months after start-up, whichever is later. Existing units must be in compliance with the guidelines as expeditiously as practicable after approval of a State plan, but no later than 3 years after the State plan is approved or 5 years after promulgation of the guidelines, whichever is earlier.

G. How did EPA determine the required records and reports for the emission standards and guidelines?

Section 129 of the CAA requires the EPA to develop regulations that include requirements for reporting the results of testing and monitoring performed to determine compliance with the standards and guidelines. The requirements must specify the form and frequency of the

reports demonstrating compliance. If there are no exceedances, compliance reports are submitted annually. However, if there is an exceedance, reports showing the exceedance of any standard or guideline must be submitted separately for review and potential enforcement action. This out-of-compliance report is due on August 1 if the exceedance occurs during the first 6 months of the year, and February 1 of the next year if the exceedance occurs during the second 6 months of the year. Copies of testing and monitoring results must be maintained on file at the affected facility. Other types of records are necessary to ensure that all provisions of the standards or guidelines are being met. Examples include siting analyses and operator training and qualification records.

H. How did EPA determine operator training and qualification requirements for the emission standards and guidelines?

The proposed standards and guidelines include operator training and qualification requirements for CISWI unit operators. These requirements provide flexibility by allowing State-approved training and qualification programs. Where there are no State-approved programs, the proposed regulations include minimum requirements for training and qualification. The minimum requirements include completion of a training course covering specified topics.

In developing these requirements, the EPA considered recommendations by the ICCR FACA Committee on the content and format for operator training and qualification programs. Training and qualification programs currently proposed or promulgated for other types of solid waste incineration units were also reviewed and used to supplement the FACA Committee recommendations to develop requirements appropriate for the CISWI source category.

I. How did EPA determine the waste management plan requirements?

The proposed standards and guidelines require facilities operating new or existing units to submit a waste management plan. Each facility is unique, and site-specific strategies are needed to achieve the most efficient results. Through the development of individual waste management programs, owners or operators of CISWI units can reduce or eliminate certain wastes in their waste streams, thereby reducing the amount of air pollution emissions associated with those wastes.

The waste management plan would identify both the feasibility and the approach to separating certain components of solid waste from the waste stream to reduce the amount of toxic emissions from incinerated waste. The waste management plan may include the reduction or separation of waste stream elements such as paper,

cardboard, plastics, glass, batteries, or metals; or the use of recyclable materials. The waste management plan may include different goals or approaches for different areas or departments of the facility and need not include waste management goals for every waste stream. It should identify, where possible, reasonably available additional waste management measures, taking into account the effectiveness of waste management measures already in place, the costs of additional measures, the emission reductions expected to be achieved, and any other associated environmental or energy impacts.

J. How did EPA determine the siting requirements for new units?

Section 129 of the CAA states that performance standards for new solid waste incineration units must incorporate siting requirements that minimize, on a site-specific basis and to the maximum extent practicable, potential risks to public health or the environment. In accordance with section 129, the EPA is proposing site selection criteria for CISWI units that commence construction after the date of proposal of this rule (i.e., "new" units). The siting requirements would not apply to existing CISWI units.

The siting requirements proposed today would require the owner or operator of a new unit to prepare an analysis of the impacts of the new unit. The owner or operator must

consider air pollution control alternatives that minimize, on a site-specific basis, to the maximum extent practicable, potential risks to public health or the environment. In considering such alternatives, the owner or operator may consider costs, energy impacts, non-air environmental impacts, or any other factors related to the practicability of the alternatives. To avoid duplication, analyses of facility impacts prepared to comply with State, local, or other Federal regulatory requirements may be used to satisfy this requirement, provided they include the consideration of air pollution control alternatives specified above. Such State, local, or Federal requirements may include, but are not limited to, State-specific criteria or national criteria established by the National Environmental Policy Act or new source permitting requirements. The owner or operator must submit the siting information to EPA prior to commencing construction of the facility.

K. How does this regulation affect permits?

Section 129 of the CAA requires CISWI units subject to the standards and guidelines to be operated pursuant to a permit issued under the EPA-approved State operating permit program. In accordance with section 129, the EPA is proposing to require a permit by the date 36 months after the date of promulgation, or on the effective date of an EPA-approved operating permit program in the State in which

the facility is located, whichever date is later. The operating permit programs are developed under title V of the CAA and the implementing regulations under 40 CFR parts 70 and 71.

IV. Impacts of the Proposed Standards for New Units

Information provided to the EPA by the ICCR FACA Committee indicates that no significant growth is expected in the population of CISWI units. With no net change in the number of CISWI units, impacts could be estimated by assuming that retiring uncontrolled units will be replaced with units controlled by wet scrubbers to meet the proposed NSPS. In this case, air emissions would decrease, and water and energy usage and wastewater generation would increase. However, the proposed emission guidelines for existing CISWI units include requirements identical to those in the proposed NSPS. Once these guidelines are in force, the emission performance of new units would be essentially the same as the units being replaced. Therefore, the proposed NSPS would reduce air emissions (and create secondary impacts) only until the emission guidelines are in place, and after that would simply maintain the emission reductions already achieved by the emission guidelines for existing units.

To illustrate the potential impact of the proposed NSPS with respect to new CISWI units under conditions where

growth in the population of CISWI units does occur, the EPA modeled hypothetical CISWI units with capacities of 100 and 1500 pounds per hour (lb/hr) (45 and 680 kilograms per hour (kg/hr)) and estimated the impacts associated with application of wet scrubbers. The resulting impact estimates are discussed below.

A. What are the air impacts?

Table 2 below illustrates, on a model unit basis, the emission reduction achieved by the proposed NSPS (i.e., the difference in emissions between a CISWI unit with a wet scrubber and an uncontrolled CISWI unit).

TABLE 2. EMISSION REDUCTIONS ON A MODEL UNIT BASIS

Pollutant	Emission Reduction, tons/yr (Mg/yr)	
	100 lb/hr (45 kg/hr) capacity	1500 lb/hr (680 kg/hr) capacity
Cadmium	5.6×10^{-4} (5.1×10^{-4})	0.01 (0.01)
Dioxins/furans	7.1×10^{-9} (6.5×10^{-9})	1.5×10^{-7} (1.4×10^{-7})
Hydrogen chloride	1.5 (1.4)	32.3 (29.3)
Lead	0.04 (0.04)	0.84 (0.76)
Mercury	5.2×10^{-5} (4.7×10^{-5})	1.1×10^{-3} (1.0×10^{-3})
Particulate matter	0.51 (0.46)	10.8 (9.8)
Sulfur dioxide	0.37 (0.34)	7.9 (7.2)

B. What are the water and solid waste impacts?

The EPA estimated, on a model unit basis, the additional water usage that would result from the use of a wet scrubber. The water requirements vary from 340,000 to

7,250,000 gallons (1.3 to 27.4 million liters) per year per CISWI unit, depending on the size of the unit. In addition to the increased water usage, an additional 50,000 to 1,056,000 gallons (189,000 to 4,000,000 liters) per year of wastewater would be produced per unit. No additional solid waste production is expected as a result of these standards.

C. What are the energy impacts?

The EPA estimated, on a model unit basis, the additional energy required to operate a wet scrubber. The additional electricity requirements range from 28,000 to 424,000 kWh/yr per CISWI unit, depending on the capacity of the unit.

D. What are the control costs and economic impacts?

The EPA estimated, on a model unit basis, the costs associated with applying wet scrubbers on new CISWI units to meet the proposed standards. The total annual costs, including costs for the wet scrubber testing, monitoring, and operator training and qualification, range from \$69,000 for a unit rated at 100 lbs/hr (45 kg/hr) to \$186,000 for a unit rated at 1500 lbs/hr (680 kg/hr). No economic impacts have been estimated as a result of the regulation of new sources because no new sources in the CISWI population are projected.

V. Impacts of the Proposed Guidelines for Existing Units

The emission guidelines for existing CISWI units are

based on emission levels achievable using wet scrubbers. Therefore, the EPA estimated the air, water and solid waste, energy, control cost, and economic impacts associated with applying wet scrubbers to those units in the existing CISWI database not currently using wet scrubbers.

A. What are the air impacts?

Table 3 summarizes the national air emission impacts of the proposed emission guidelines. These impacts are expressed in two ways. First, the impacts are expressed as annual nationwide mass reductions; and second as percent reductions compared to current estimated national emissions for existing CISWI units.

TABLE 3. EMISSION REDUCTIONS FOR EXISTING CISWI UNITS

Pollutant	National Emission Reduction tons/yr (Mg/yr)	Percent Reduction from Current (Baseline) Emissions
Cadmium	0.45 (0.41)	87
Dioxins/furans	6.5×10^{-6} (5.9×10^{-6})	88
Hydrogen chloride	1315 (1193)	89
Lead	31.4 (28.5)	87
Mercury	0.045 (0.041)	79
Particulate matter	409 (371)	71
Sulfur dioxide	322 (292)	72

B. What are the water and solid waste impacts?

Assuming that no CISWI unit will shutdown as a result of the proposed guidelines, there would be no solid waste impacts associated with this proposed rule. If alternative

disposal methods, such as landfills, become more cost effective for some CISWI units as a result of the proposed guidelines, solid waste by such units would increase in proportion to the reduction in feedstream to the CISWI unit. National annual water consumption would increase by 295 million gallons (1,117 million liters), and an additional 43 million gallons (163 million liters) per year of wastewater would be released.

C. What are the energy impacts?

The EPA expects an increase of approximately 16.7 million kilowatt hours (kWh) in national annual energy usage as a result of these emission guidelines. The increase results from the electricity required to operate wet scrubbers installed to meet the guidelines.

D. What are the control costs and economic impacts?

To estimate the national cost impacts of the proposed guidelines, the EPA assigned model CISWI units to each existing unit in the database. The analysis considered all air pollution control equipment currently in operation at existing CISWI units. Model costs for wet scrubbers were then assigned to all existing units that could not otherwise meet the proposed emission limits. The resulting total national cost impact of the proposed guidelines is \$31.5 million in capital expenditures and \$11.6 million per year in total annual costs.

This proposal would affect a small number of facilities in many different industries and government entities. Of the 112 affected facilities analyzed, 92 are spread among 25 different industries, 15 are spread among State, Federal and city governments, and 5 are located at universities.

Because of the competitive nature of the markets and the relatively small number of affected facilities in each market, producers will be unable to pass along the cost of the regulation to consumers in the short run. Hence, these costs will be borne primarily by the affected domestic producers. This conclusion also implies that the impact of the regulation on imports and exports will be negligible. The economic analysis further indicates that the impact of the proposed regulation on total employment in the industries affected will be negligible. The ratio of control costs to company sales is low; only 9 of the 79 companies owning affected facilities in the 25 different industries had cost-to-sales ratios of 3 percent or more, and 15 had ratios exceeding 1 percent. It is anticipated that no plants will close as a result of the regulation. However, the use of alternative waste management decisions, such as the use of landfills or selling materials as fuels or intermediate products, should lower the total social cost of the regulation below the annual cost estimate of \$11.6 million, assuming add-on control technology is used for all

affected units.

VI. Definition Of Solid Waste

Section 129 of the CAA directs EPA to develop regulations limiting emissions from solid waste incineration units. Section 129 also states, however, that the term "solid waste incineration unit" does not include units required to have a permit under section 3005 of the Solid Waste Disposal Act (SWDA). This reference to section 3005 of the SWDA refers to the hazardous waste regulatory program authorized under the SWDA. As a result, the focus of the regulatory program authorized by section 129 is the burning of nonhazardous solid waste.

Section 129 does not define nonhazardous solid waste, but directs EPA to use the meaning of solid waste established by the Administrator pursuant to the SWDA. As a point of reference, the SWDA defines solid waste as follows:

. . . any garbage, refuse, sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility and other discarded material including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations, and from community activities, but does not include solid or dissolved material in domestic sewage, or solid or dissolved materials in irrigation return flows or industrial discharges which are point sources subject to permits under section 402 of the Federal Water Pollution Control Act, as amended, or source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954, as amended.

To develop and implement the hazardous waste regulatory

program authorized by the SWDA, the Administrator adopted a definition of hazardous waste pursuant to the SWDA. This definition is found in part 261 of title 40 of the CFR. In defining hazardous waste, part 261 also defines solid waste.

However, in doing so, part 261 states explicitly in 40 CFR 261.1(b)(1) that this definition of solid waste is only for the purpose of materials that are hazardous wastes. This regulatory definition of the term solid waste found in part 261, therefore, does not apply to nonhazardous solid wastes.

The Administrator has also adopted several other definitions of solid waste pursuant to the SWDA. These definitions are found throughout parts 240 to 259 of 40 CFR. However, these definitions are little more than a restatement, with occasional small variation, of the statutory definition of the term solid waste contained in the SWDA. Consequently, they do little to clarify the meaning of nonhazardous solid waste for the purpose of developing and implementing the regulatory program authorized under section 129 of the CAA.

The Administrator, therefore, proposes to adopt a definition of solid waste (i.e., nonhazardous solid waste) jointly under the authority of the CAA and the SWDA. The purpose of this definition would be solely to identify nonhazardous solid waste for the regulatory program

authorized by section 129. Also, since section 129 only authorizes development of regulations to control emissions from the burning of nonhazardous solid waste, this definition would apply only to materials that are burned; it would not apply to materials managed by any other means (e.g., treatment, storage, transportation and handling, etc.).

As mentioned, section 129 authorizes development of regulations to limit emissions from the burning of nonhazardous solid waste. In contrast, section 112 of the CAA authorizes development of regulations to limit emissions from stationary sources of toxic air pollutants, including sources burning hazardous waste and fuels. The EPA has adopted regulations under section 112 to limit emissions from hazardous waste combustion in incinerators and kilns and is developing regulations to limit emissions from hazardous waste combustion in boilers and industrial furnaces. In addition, EPA is also developing regulations under section 112 to limit emissions from burning fuels in stationary sources, such as boilers. Consequently, the main purpose of this definition of nonhazardous solid waste is merely to identify which materials (when burned) are subject to regulations developed under section 129 and which materials (when burned) are subject to regulations developed under section 112.

One option, in terms of adopting a definition of nonhazardous solid waste for regulations developed under section 129, is to adopt the definition of solid waste found in part 261 of 40 CFR. Although considered, this option is rejected. That definition was adopted for the sole purpose of identifying hazardous waste in order to develop regulations for the proper management of these materials. Management of hazardous waste covers an extremely broad area and ranges from handling and transportation, to reuse and recycling, to storage, treatment, and/or disposal of these materials.

Regulations developed under section 129 apply only to the burning of nonhazardous solid waste--they do not apply to any other form of waste management. As a result, a definition of solid waste for the purpose of section 129 can be much simpler and less complex; it need only focus on burning and need not consider any of the complexities associated with other forms of waste management. Another factor also greatly simplifies the development of a definition of nonhazardous waste--a definition of hazardous solid waste already exists.

Therefore, the EPA believes that materials that are burned fall into three categories: hazardous waste, nonhazardous solid waste, or fuel. If the materials meet the definition of hazardous waste, they cannot be

nonhazardous solid waste or fuel. Only if the materials do not meet the definition of hazardous waste can they be nonhazardous solid waste or fuel. This makes the task of developing a definition of nonhazardous solid waste relatively straightforward. The definition must first answer the question: "Are the materials being burned nonhazardous solid waste or fuel?"

It is basically the composition or the level of hazardous constituents present in wastes that determines whether they are hazardous in nature (i.e., in the RCRA program under 40 CFR 261.3, hazardous wastes are specifically defined as wastes that meet a particular listing description or that exhibit a characteristic of hazardous waste). However, it is basically the heat value of materials and whether or not they are burned with energy recovery that determines whether they are nonhazardous solid waste or fuel. Only materials with a high heat value contain sufficient energy to be used as fuel. Materials with little heat value contain little energy and if they are burned, it is not as a fuel but rather for destruction or disposal. In addition, although materials with high heat value may contain sufficient energy to be used as fuel, they are not used as fuel when they are burned without energy recovery.

In considering how to structure a definition for

nonhazardous solid waste that answers the question "Are the materials being burned nonhazardous solid waste or fuel?", it is useful to consider the definition of hazardous waste under part 261, in terms of how this definition distinguishes between hazardous waste and fuel, when materials are burned. While this definition applies only to hazardous waste, it provides several insights into a basic outline for a definition of nonhazardous solid waste for the purpose of regulations under section 129 of the CAA. This definition, as it applies to waste combustion, can be summarized as follows:

- Materials are solid waste if they are discarded; discarded materials are abandoned materials, and materials are considered abandoned when burned or incinerated.
- Discarded materials also include certain recycled materials. Recycled materials are considered discarded when the materials are burned to recover energy, except for various commercial chemical products that are fuels.

Furthermore, part 261 includes the following specific exemptions from the definition of solid waste that are related to burning: pulping liquors when burned and reclaimed in a pulping liquor recovery furnace, spent sulfuric acid when burned to produce virgin sulfuric acid,

and comparable fuels when burned to recover energy.

This can be restated simply as: the act of burning materials, with some exceptions, serves to identify those materials as solid waste. One exception is commercial chemical products that are fuels as well as other materials that are "comparable fuels" when these materials are burned to recover energy. Thus, fuels and comparable fuels are not solid wastes when they are burned to recover energy. Other exceptions are certain materials, such as pulping liquors and spent sulfuric acid, which are burned to recover their chemical constituents.

Consequently, the basic structure of a definition of nonhazardous solid waste that emerges follows this premise: materials that are burned are not nonhazardous solid waste if they are hazardous solid waste, if they are fuels burned to recover energy, or if they are certain identified materials burned to recover their chemical constituents. All other materials, when burned, are nonhazardous solid waste.

With a definition of hazardous waste available, a definition of those materials that are fuels (when burned to recover energy) is the next piece necessary to develop this definition of nonhazardous waste, for the purpose of regulations developed under section 129.

Some materials, when burned to recover energy (e.g.,

for the production of hot water or steam), have a long history of being considered fuels. These materials are coal, oil, gas, and biomass (e.g., wood and other vegetative agricultural and silvicultural materials). Burning coal, oil, gas, and biomass produces the majority of the energy consumed in the United States. In addition to these materials, other materials are often burned as fuel to recover energy and meet the needs of consumers, as well as industrial, manufacturing, and commercial operations.

As mentioned earlier, the prime indicator of whether materials could be used as fuel (i.e., can be burned to recover energy) is their heat value-- the British thermal units (Btu) of energy released from burning a pound (lb) of these materials. With continuing advances in combustion technology, materials with lower and lower heat value can be burned to recover energy; however, those materials with a "high" heat value are the best fuels, and it is these types of materials that are commonly and widely viewed as fuels. Thus, for the purpose of regulations developed under section 129 of the CAA, the Administrator proposes that materials with high heat value, when burned to recover energy, are fuels. (When materials are burned without heat recovery, regardless of their heat value, they are considered wastes.)

A delineator of high heat value emerges when considering the heat values of those materials mentioned

above, which are clearly fuels when burned to recover energy (i.e., gas, oil, coal, and biomass). Heat values for gas are the highest and frequently above 20,000 Btu/lb; those for oil can range from about 17,000-20,000 Btu/lb; those for coal can range from about 6,000-15,000 Btu/lb; and those for biomass can range from about 5,000-10,000 Btu/lb. Thus, a heat value of 5,000 Btu/lb serves to delineate between materials with high heat value and materials with low heat value. The Administrator proposes that materials with a heat value of 5,000 Btu/lb or more, when burned to recover energy, are fuel (subject to regulation under section 112) and not nonhazardous solid waste subject to regulation under section 129.

The final area of the definition outlined above that needs to be identified is that of any other materials that (when burned) are not considered nonhazardous solid waste for the purpose of regulations developed under section 129. The criteria for these materials seems simple, in concept. Burning--with some exceptions--is considered a form of discarding materials. However, EPA believes that certain other materials are not burned to discard them. The primary example where burning materials is not a form of discard is where materials are burned to recover their chemical constituents. An example is burning spent sulfuric acid to produce fresh sulfuric acid. Burning spent pulping liquors

to produce fresh pulping liquors is yet another example. Burning wood or coal to produce charcoal or coke are other examples. There may be additional examples as well.

Consequently, the Administrator proposes that these materials, when burned in the manner identified in the examples above, are not nonhazardous solid waste and are not subject to regulation under section 129. On the other hand, the Administrator also concludes that these materials, when burned in the manner identified in the examples above, are subject to regulation under section 112 of the CAA.

Since there may be other examples where materials are burned to recover chemical constituents, the Administrator solicits public comment on additional materials that should be added to those mentioned above. In submitting comments, commenters should: (1) describe the "source" of these materials; (2) identify the composition of these materials, highlighting the chemical constituents in these materials which are recovered; (3) describe the "process" in which these materials are burned, highlighting the type, design, and operation of the equipment used in this process; (4) describe the chemical constituent recovery "process," highlighting the type, design, and operation of the equipment used in this process; (5) identify the markets and/or use for the recovered chemical constituents; and (6) identify the composition of the recovered chemical

constituents and compare their composition to that of comparable commercially available products.

Most of the above discussion focuses on materials that are not nonhazardous solid waste, for the purpose of regulations developed under section 129. There are materials, however, that are always solid waste (e.g., hazardous waste). In addition, there are also materials that (when burned) are always nonhazardous solid waste for the purpose of regulations developed under section 129: municipal solid waste, as defined in subparts Ea, Eb, AAAA, and BBBB in 40 CFR part 60; and hospital waste and medical/infectious waste, as defined in subpart Ec in 40 CFR part 60. Because the proposed definition of nonhazardous solid waste applies only to section 129, previous and future determinations under subpart E, Standards of Performance for Incinerators, in 40 CFR part 60 would not be affected.

In summary, the definition we propose today of (nonhazardous) solid waste is consistent with the requirements of section 129 of the CAA because it incorporates the definition of solid waste in the SWDA and builds upon the definition established by the Administrator pursuant to the SWDA to comprehensively identify those wastes which are, when burned, nonhazardous solid wastes.

VII. Public Participation and Request for Comments

The ICCR Federal Advisory Committee (i.e., the

Coordinating Committee), which is discussed in section I.C., was designed and created to foster active participation from stakeholders, including environmental groups, regulated industries, local governments, Federal agencies, and State and local regulatory agencies. The stakeholders were able to participate in the development of FACA Committee recommendations on many regulatory issues.

The ICCR Coordinating Committee also encouraged the public to provide input on its decisions and recommendations throughout the 2-year charter. To enhance the public's ability to participate, the EPA maintained a bulletin board on the TTN Web internet site to disseminate information on Coordinating Committee and Work Group meeting schedules and minutes, works in progress, and final recommendations. The public could submit comments on any information posted on the bulletin board to members of the Coordinating Committee or Work Group. Individuals could also attend Coordinating Committee and Work Group meetings and comment on the information being presented and discussed. After the FACA charter expired, individual stakeholders and members of the public were encouraged to submit individual comments and information to EPA staff.

To continue the participation of stakeholders in the rulemaking process, the EPA is requesting comments and data to support this proposed regulation. The EPA requests

comments on any classes or types of CISWI units, or CISWI unit size considerations, that have not been addressed in this proposed rule, including a discussion about how the units should be treated under this rulemaking (section III.A). The EPA requests comments on whether it would be appropriate to include alternative percent reduction requirements for CISWI units, any data upon which those requirements could be based, and whether emission limits should be established for pollutants in addition to the nine pollutants plus opacity (section III.B). The EPA requests comments on whether fabric filters or other control techniques can achieve lower particulate matter emissions for CISWI units, and whether one of these techniques should represent the basis of the CISWI particulate matter emission limit (section III.C). The EPA also requests any other emissions test data available for the MACT floor technologies applied to CISWI units (section III.C). The EPA requests comments on whether other control technologies should be considered as beyond the floor regulatory options (section III.C). Finally, the EPA requests comments on the mercury, dioxins/furans, oxides of nitrogen, and carbon monoxide emission limits (section III.D), materials burned to recover chemical constituents (section VI), and the recordkeeping and reporting burden (section VIII.E).

VIII. Administrative Requirements

A. Public Hearing

In accordance with section 307(d)(5) of the CAA, EPA will hold a public hearing if individuals request to speak. If a public hearing is held, EPA may ask clarifying questions during the oral presentation but will not respond to the presentations or comments. To provide an opportunity for all who may wish to speak, oral presentations will be limited to 15 minutes each. Any member of the public may submit written comments (see the DATES and ADDRESSES sections). The EPA will consider written comments and supporting information with equivalent weight as any oral statement and supporting information presented at a public hearing.

B. Docket

The docket is an organized and complete file of all the information considered by the EPA in developing this proposal. Material is added to the docket throughout the rulemaking process. The docketing system is intended to allow members of the public to identify and locate documents so that they can effectively participate in the rulemaking process. The contents of the docket will serve as the record in case of judicial review (see 42 U.S.C. 7607(d)(7)(A)) except for interagency review material. The docket number for the CISWI source category is A-94-63. (See the ADDRESSES section for the availability of docket

material.)

C. Executive Order 12866

Under Executive Order 12866 (58 FR 51735, October 4, 1993), the EPA must determine whether a regulatory action is "significant" and therefore subject to Office of Management and Budget (OMB) review and the requirements of the Executive Order. The Order defines "significant regulatory action" as one that is likely to result in a rule that may:

(1) Have an annual effect on the economy of \$100 million or more, or adversely affects in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities;

(2) Creates a serious inconsistency or otherwise interferes with an action taken or planned by another agency;

(3) Materially alters the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or

(4) Raises novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.

Pursuant to the terms of Executive Order 12866, OMB has notified EPA that it considers this a "significant regulatory action" within the meaning of the Executive

Order. The EPA has submitted this action to OMB for review. Changes made in response to OMB suggestions or recommendations will be documented in the public record.

D. Regulatory Flexibility Act/Small Business Regulatory Enforcement Fairness Act (SBREFA)

The Regulatory Flexibility Act (RFA) generally requires Federal agencies to conduct a regulatory flexibility analysis of any rule subject to notice and comment rulemaking requirements unless the EPA certifies that the rule will not have a significant economic impact on a substantial number of small entities. Small entities include businesses, small not-for-profit enterprises, and small governmental jurisdictions. The proposed regulation will affect 112 existing facilities owned by 90 parent companies. Based on Small Business Administration guidelines, 26 of the companies are small businesses. The lumber and wood products industry includes the largest number (7) of the small businesses, followed by fabricated metals, veterinary hospitals, and wholesale trade sectors with three companies each. Also, four cities are classified as small governments because they have fewer than 50,000 residents. The remaining six small businesses are distributed across six different industries. Only nine small businesses had cost-to-sales ratios greater than 3 percent (ranging from 3.4 to 27.7 with a median of 4.0

percent), and fifteen small businesses had cost-to-sales ratios greater than 1 percent, assuming add-on control is employed to meet the standard rather than alternative disposal methods. For the nine entities that had cost-to-sales ratios greater than 3 percent, the median amount of material incinerated was about 50 tons per year. Because of the relatively small number of tons per year being incinerated, the alternative net cost for sending waste to a landfill for many of these facilities is likely to be less than the control costs, based on an estimated total alternative disposal cost (i.e., transportation cost plus tipping fee) of about \$58/ton. Thus, it may be economically feasible for some of these small entities to switch to an alternative disposal method, such as off-site landfills, and lower their net compliance costs.

For the four identified small governments, cost-to-revenue ratios were low, ranging from 0.11 to 1.7 percent. The annualized cost per capita ranged from \$1.68 to \$19.81.

Based on the low number of affected small entities and the relatively low control cost, this analysis suggests that the proposed regulation should not generate a significant small business impact on a substantial number of small entities in the commercial, industrial, and government sectors. Therefore, I certify that this action will not have a significant economic impact on a substantial number

of small entities.

E. Paperwork Reduction Act

The information collection requirements in these proposed rules have been submitted for approval to OMB under the Paperwork Reduction Act, 44 U.S.C. 3501 et seq. The ICR documents have been prepared by EPA (ICR No. 1926.01 for subpart CCCC and 1927.01 for subpart DDDD), and copies may be obtained from Sandy Farmer by mail at OP Regulatory Information Division; U.S. Environmental Protection Agency (2137); 401 M St., S.W.; Washington, DC 20460, by e-mail at farmer.sandy@epa.gov, or by calling (202) 260-2740. Copies may also be downloaded from the internet at <http://www.epa.gov/icr>.

These proposed rules contain monitoring, reporting, and recordkeeping requirements. The information would be used by the EPA to identify new, modified, or reconstructed incineration units subject to the NSPS and to ensure that new incineration units undergo a siting analysis and that the analysis is reviewed by the public. Records and reports would be necessary to enable EPA to identify waste incineration units that may not be in compliance with the requirements. Based on reported information, EPA would decide which units and what records or processes should be inspected.

These recordkeeping and reporting requirements are

specifically authorized by section 114 of the CAA (42 U.S.C. 7414). All information submitted to the EPA for which a claim of confidentiality is made will be safeguarded according to EPA policies in 40 CFR part 2, subpart B, Confidentiality of Business Information.

The estimated average annual burden for the first 3 years after promulgation of the NSPS for industry and the implementing agency is outlined below.

Affected entity	Total hours	Labor costs	Capital costs	O&M costs	Total costs
Industry	11,209	\$685,269	\$13,440	\$1,266	\$699,975
Implementing agency	794	\$32,608	0	0	\$32,608

The EPA expects the NSPS to affect 18 CISWI units over the first 3 years, based on the assumption that 6 existing units will be replaced by 6 new units each year. The EPA estimates the total annualized capital and start-up costs for these new units to be \$13,440. Continuous parameter monitoring equipment would be required for new units. When a wet scrubber is used to meet the emission limits, monitoring equipment must be installed to monitor maximum charge rate, minimum pressure drop across the wet scrubber or minimum horsepower or amperage to the wet scrubber, minimum scrubber liquor flow rate, and minimum scrubber liquor pH. The estimated total operation, maintenance, and purchase costs for the monitoring equipment averaged over

the first 3 years are expected to be \$1,266. The implementing agency would not incur any capital or start-up costs.

The estimated average annual burden for the first 3 years after promulgation of the emission guidelines for industry and the implementing agency is outlined below.

Affected entity	Total hours	Labor costs	Capital costs	O&M costs	Total costs
Industry	9,145	\$407,067	0	0	\$407,067
Implementing agency	1,817	\$48,386	0	0	\$48,386

The EPA expects the emission guidelines to affect a maximum of 116 units over the first 3 years. The EPA assumes that 6 existing units will be replaced by 6 new units each year. There are no capital, start-up, or operation and maintenance costs for existing units during the first 3 years. The implementing agency would not incur any capital or start-up costs.

Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, disclose, or provide information to or for a Federal agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information;

adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information.

An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for EPA's regulations are listed in 40 CFR part 9 and 48 CFR chapter 15.

Comments are requested on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques. Send comments on the ICR to the Director, OP Regulatory Information Division; U.S. Environmental Protection Agency (2137); 401 M St., S.W.; Washington, DC 20460; and to the Office of Information and Regulatory Affairs, Office of Management and Budget, 725 17th St., N.W., Washington, DC 20503, marked "Attention: Desk Officer for EPA." Include the ICR number in any correspondence. Since OMB is required to make a decision concerning the ICR between 30 and 60 days after [insert date of publication in the FEDERAL REGISTER], a comment to OMB is best assured of

having its full effect if OMB receives it by [insert date 30 days after publication in the FEDERAL REGISTER]. In the final rule, the EPA will respond to any OMB or public comments on the information collection requirements contained in this proposal.

F. Unfunded Mandates Reform Act

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), Pub. L. 104-4, establishes requirements for Federal agencies to assess the effects of their regulatory actions on State, local, and tribal governments and the private sector. Under section 202 of the UMRA, EPA generally must prepare a written statement, including a cost-benefit analysis, for proposed and final rules with "Federal mandates" that may result in expenditures to State, local, and tribal governments, in the aggregate, or to the private sector, of \$100 million or more in any 1 year.

Before promulgating an EPA rule for which a written statement is needed, section 205 of the UMRA generally requires EPA to identify and consider a reasonable number of regulatory alternatives and adopt the least costly, most cost-effective or least burdensome alternative that achieves the objectives of the rule. The provisions of section 205 do not apply when they are inconsistent with applicable law. Moreover, section 205 allows EPA to adopt an alternative other than the least costly, most cost-effective or least

burdensome alternative if the Administrator publishes with the final rule an explanation of why that alternative was not adopted.

Before EPA establishes any regulatory requirements that may significantly or uniquely affect small governments, including tribal governments, it must have developed under section 203 of the UMRA a small government agency plan. The plan must provide for notifying potentially affected small governments, thereby enabling officials of affected small governments to have meaningful and timely input in the development of EPA regulatory proposals with significant Federal intergovernmental mandates, and informing, educating, and advising small governments on compliance with the regulatory requirements.

The EPA has determined that this rule does not contain a Federal mandate that may result in expenditures of \$100 million or more for State, local, and tribal governments, in the aggregate, or the private sector in any 1 year. Thus, today's proposal is not subject to the requirements of sections 202 and 205 of the UMRA. Additionally, the EPA has determined that this rule contains no regulatory requirements that might significantly or uniquely affect small governments.

G. Executive Order 13084: Consultation and Coordination with Indian Tribal Governments

Under Executive Order 13084, EPA may not issue a regulation that is not required by statute, that significantly or uniquely affects the communities of Indian tribal governments, and that imposes substantial direct compliance costs on those communities, unless the Federal government provides the funds necessary to pay the direct compliance costs incurred by the tribal governments, or EPA consults with those governments. If EPA complies by consulting, Executive Order 13084 requires EPA to provide to OMB, in a separately identified section of the preamble to the rule, a description of the extent of EPA's prior consultation with representatives of affected tribal governments, a summary of the nature of their concerns, and a statement supporting the need to issue the regulation. In addition, Executive Order 13084 requires EPA to develop an effective process permitting elected officials and other representatives of Indian tribal governments "to provide meaningful and timely input in the development of regulatory policies on matters that significantly or uniquely affect their communities."

Today's proposal does not significantly or uniquely affect the communities of Indian tribal governments. The EPA does not know of any CISWI units owned by Indian tribal governments. However, if there are any, the effect of these rules on communities of tribal governments would not be

unique or disproportionate to the effect on other communities. Accordingly, the requirements of section 3(b) of Executive Order 13084 do not apply to this rule.

H. National Technology Transfer and Advancement Act

Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (NTTAA), Pub. L. No. 104-113, §12(d) (15 U.S.C. 272 note), directs the EPA to use voluntary consensus standards in its regulatory activities unless to do so would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (e.g., materials specifications, test methods, sampling procedures, business practices, etc.) that are developed or adopted by voluntary consensus standard bodies. The purpose of the NTTAA is to reduce the costs to the private and public sectors by requiring Federal agencies to use existing technical standards used in commerce or industry. The NTTAA requires the EPA to provide Congress, through OMB, explanations when the EPA decides not to use available and applicable voluntary consensus standards.

The EPA evaluated these subparts to determine if any of the requirements of the NTTAA are applicable. The EPA has concluded that this proposal does not establish or modify technical standards, therefore, the requirements of the NTTAA do not apply. Several test methods are required to demonstrate compliance with the guidelines and standards;

however, all of these test methods are established EPA methods and have been commonly used to test emission levels at incineration units in the past. The EPA requests public comments on the existence of voluntary consensus standards that should be considered for this proposal.

I. Executive Order 13045: Protection of Children from Environmental Health Risks and Safety Risks

Executive Order 13045 (62 FR 19885, April 23, 1997) applies to any rule that EPA determines: (1) is "economically significant" as defined under Executive Order 12866, (2) is based on health or safety risks, and (3) for which the EPA has reason to believe may disproportionately affect children. If the regulatory action meets these criteria, the EPA must evaluate the environmental health or safety effects of the planned rule on children and explain why the planned regulation is preferable to other potentially effective and reasonably feasible alternatives considered by the EPA.

The EPA interprets Executive Order 13045 as applying only to those regulatory actions that are based on health or safety risks, such that the analysis required under section 5-501 of the Order has the potential to influence the regulation. This proposal is not subject to Executive Order 13045 because it is based on technology performance and not on health or safety risks. Additionally, this

proposal is not economically significant as defined by Executive Order 12866.

J. Executive Order 13132: Federalism

Executive Order 13132, entitled "Federalism" (64 FR 43255, August 10, 1999), requires EPA to develop an accountable process to ensure "meaningful and timely input by State and local officials in the development of regulatory policies that have federalism implications." "Policies that have federalism implications" is defined in the Executive Order to include regulations that have "substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government." Under Executive Order 13132, EPA may not issue a regulation that has federalism implications, that imposes substantial direct compliance costs, and that is not required by statute, unless the Federal government provides the funds necessary to pay the direct compliance costs incurred by State and local governments, or EPA consults with State and local officials early in the process of developing the proposed regulation. The EPA also may not issue a regulation that has federalism implications and that preempts State law unless the EPA consults with State and local officials early in the process of developing the proposed regulation.

If EPA complies by consulting, Executive Order 13132 requires EPA to provide to the Office of Management and Budget (OMB), in a separately identified section of the preamble to the rule, a federalism summary impact statement. The federalism summary impact statement must include a description of the extent of EPA's prior consultation with State and local officials, a summary of the nature of their concerns and the EPA's position supporting the need to issue the regulation, and a statement of the extent to which the concerns of State and local officials have been met. Also, when EPA transmits a draft final rule with federalism implications to OMB for review pursuant to Executive Order 12866, EPA must include a certification from the agency's Federalism Official stating that EPA has met the requirements of Executive Order 13132 in a meaningful and timely manner.

This proposed rule will not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government, as specified in Executive Order 13132. This rule establishes national performance standards and other requirements for certain solid waste incineration units. The EPA is required by section 129 of the CAA, 42 U.S.C. §7429, to establish the standards and guidelines embodied in

this proposed rule. This proposed regulation primarily affects private industry, and does not impose significant economic costs on State or local governments. The standards established by this rule apply to new facilities that operate commercial or industrial incineration units (and the owners or operators of such facilities), and require States to submit State plans that include standards applicable to existing incineration units that are at least as protective as the standards specified in the proposed rule. If a State does not submit an approvable plan, any covered incineration units in that State will become subject to a Federal plan to implement this proposed rule. The proposed regulation does not include an express provision preempting State or local regulations. However, once a State or Federal plan is in effect, covered facilities would be subject to the standards established by this proposed rule, regardless of any less protective State or local regulations that contain emission limitations for the pollutants addressed by this proposed rule. To the extent that this might preempt State or local regulations, it does not significantly affect the relationship between the national government and the States, or the distribution of power and responsibilities among the various levels of government. Thus, the requirements of section 6 of the Executive Order do not apply to this rule, and EPA has complied with the requirements of section 4(e),

to the extent that they may be applicable to the proposed regulations, by providing notice to potentially affected State and local officials through publication of this proposed rule.

Although section 6 of Executive Order 13132 does not apply to this proposed rule, EPA consulted with representatives of State and local governments to enable them to provide meaningful and timely input into the development of this rule. This consultation took place during the ICCR FACA committee meetings, where members representing State and local governments participated in developing recommendations for EPA's combustion-related rulemakings, including this proposed rule (see section I.C. of this preamble). Additionally, the EPA sponsored the Small Communities Outreach Project, which involved meetings with elected officials and other government representative to provide them with information about this proposed rule and to solicit their comments. The concerns raised by representative of State and local governments were considered during the development of this proposed rule.

List of Subjects in 40 CFR part 60

Air pollution control, Carbon monoxide, Metals, Nitrogen dioxide, Particular matter, Sulfur oxides, Waste treatment and disposal.

Dated

Carol M. Browner,
Administrator.

For the reasons stated in the preamble, title 40, chapter I, part 60 of the Code of Federal Regulations is amended as follows:

PART 60--[AMENDED]

1. The authority citation for part 60 continues to read as follows:

Authority: 42 U.S.C. 7401, 7411, 7414, 7416, 7429, and 7601.

2. Part 60 is amended by adding subpart CCCC to read as follows:

Subpart CCCC--Standards of Performance for New Stationary Sources: Commercial and Industrial Solid Waste Incineration Units

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INTRODUCTION

§60.2000 What does this subpart do?

This subpart establishes new source performance standards for commercial and industrial solid waste incineration (CISWI) units.

§60.2005 When does this subpart become effective?

This subpart takes effect 6 months after promulgation

of the final rule in the Federal Register. Some of the requirements in this subpart apply to planning the CISWI unit and must be completed even before construction is initiated on the CISWI unit (i.e., the preconstruction requirements in §§60.2040 and 60.2045). Other requirements such as the emission limits apply after the CISWI unit begins operation.

APPLICABILITY

§60.2010 Does this subpart apply to my incineration unit?

Yes, if your incineration unit meets all of the following criteria:

(a) Your incineration unit is a new incineration unit as defined in §60.2015 - "What is a new incineration unit?";

(b) Your CISWI unit burns solid waste as defined in §60.2245 - "What definitions must I know?".

(c) Your incineration unit burns less than 90 percent by weight (instantaneous basis) pathological waste as defined in §60.2245.

(d) Your incineration unit burns less than 90 percent by weight (instantaneous basis) agricultural wastes as defined in §60.2245.

(e) Your incineration unit is not regulated under subpart Ea of this part (Standards of Performance for Municipal Waste Combustors), subpart Eb of this part

(Standards of Performance for Municipal Waste Combustors for Which Construction is Commenced After September 20, 1994), or subpart AAAA of this part (Standards of Performance for New Stationary Sources: Small Municipal Waste Combustion Units).

(f) Your incineration unit is not regulated under subpart Ec of this part (Standards of Performance for Hospital/Medical/Infectious Waste Incinerators for Which Construction is Commenced After June 20, 1996).

§60.2015 What is a new incineration unit?

(a) A new incineration unit is an incineration unit that meets either of the following two criteria:

(1) Commenced construction after [insert date of publication of this proposed rule in the FEDERAL REGISTER].

(2) Commenced reconstruction or modification 6 months (or later) after promulgation of this subpart.

(b) This subpart does not affect your incineration unit if you make physical or operational changes to your incineration unit primarily to comply with the emission guidelines in subpart DDDD of this part (Emission Guidelines and Compliance Times for Commercial and Industrial Solid Waste Incineration Units). Such changes do not qualify as reconstruction or modification under this subpart.

§60.2020 Does this subpart allow any exemptions?

Yes. This subpart allows the following statutory

exemptions:

(a) Small power production facilities. You are exempt from this subpart if you meet all of the following four requirements:

(1) Your unit qualifies as a small power-production facility under section 3(17)(C) of the Federal Power Act (16 U.S.C. 796(17)(C)).

(2) Your unit burns homogeneous waste (not including refuse-derived fuel) to produce electricity.

(3) You notify the Administrator that the unit qualifies for this exemption.

(4) You provide the Administrator with documentation that the unit qualifies for this exemption.

(b) Cogeneration facilities. You are exempt from this subpart if you meet all of the following four requirements:

(1) Your unit qualifies as a cogeneration facility under section 3(18)(B) of the Federal Power Act (16 U.S.C. 796(18)(B)).

(2) Your unit burns homogeneous waste (not including refuse-derived fuel) to produce electricity and steam or other forms of energy used for industrial, commercial, heating, or cooling purposes.

(3) You notify the Administrator that the unit qualifies for this exemption.

(4) You provide the Administrator with documentation

that the unit qualifies for this exemption.

(c) Hazardous waste combustion units. You are exempt from this subpart if you get a permit for your unit under section 3005 of the Solid Waste Disposal Act.

(d) Materials recovery units. You are exempt from this subpart if your unit combusts waste for the primary purpose of recovering metals. This includes primary and secondary smelters.

(e) Air curtain incinerators. If your air curtain incinerator (see §60.2245 for definition) burns 100 percent wood waste and clean lumber, you must only meet the requirements under "Air Curtain Incinerators That Burn 100 Percent Wood Wastes and Clean Lumber" (§§60.2225 through 60.2240).

§60.2025 Can the Administrator delegate authority to enforce these Federal standards to a State agency?

Yes. The Administrator may delegate all authorities in all sections of this subpart to the State for direct State enforcement.

§60.2030 How are the standards structured?

The standards contain seven major components, as follows:

- (a) Preconstruction siting analysis.
- (b) Waste management plan.
- (c) Operator training and qualification.

- (d) Emission limits.
- (e) Stack testing and compliance.
- (f) Monitoring.
- (g) Recordkeeping and reporting.

§60.2035 Do all seven components of the standards apply at the same time?

No. You must meet the preconstruction siting analysis and waste management plan requirements before you commence construction of the CISWI unit. The operator training and qualification, emission limits, stack testing and compliance, monitoring, and most recordkeeping and reporting requirements are met after the CISWI unit begins operation.

PRECONSTRUCTION SITING ANALYSIS

§60.2040 Who must prepare a siting analysis?

(a) You must prepare a siting analysis if you plan to commence construction of a CISWI unit after promulgation of this subpart in the Federal Register.

(b) You must prepare a siting analysis if you are required to submit an initial application for a construction permit under 40 CFR part 51, subpart I, or 40 CFR part 52, as applicable, for the reconstruction or modification of your CISWI unit.

§60.2045 What is a siting analysis?

- (a) The siting analysis must consider air pollution

control alternatives that minimize, on a site-specific basis, to the maximum extent practicable, potential risks to public health or the environment. In considering such alternatives, the analysis may consider costs, energy impacts, non-air environmental impacts, or any other factors related to the practicability of the alternatives.

(b) Analyses of your CISWI unit's impacts that are prepared to comply with the State, local, or other Federal regulatory requirements may be used to satisfy the requirements of this section, provided they include the consideration of air pollution control alternatives specified in paragraph (a) of this section.

(c) You must complete and submit the siting requirements of this section as required under §60.2170(c) prior to commencing construction.

WASTE MANAGEMENT PLAN

§60.2050 What is a waste management plan?

A waste management plan is a written plan that identifies both the feasibility and the approach to separate certain components of solid waste from the waste stream in order to reduce the amount of toxic emissions from incinerated waste.

§60.2055 When must I submit my waste management plan?

You must submit a waste management plan prior to

commencing construction.

§60.2060 What should I include in my waste management plan?

A waste management plan may include, but is not limited to, the reduction or separation of waste-stream elements such as paper, cardboard, plastics, glass, batteries, or metals; or the use of recyclable materials. The waste management plan may include different goals or approaches for different areas or departments of the facility and need not include new waste management goals for every waste stream. It should identify, where possible, reasonably available additional waste management measures, taking into account the effectiveness of waste management measures already in place, the costs of additional measures, the emission reductions expected to be achieved, and any other environmental or energy impacts they might have.

OPERATOR TRAINING AND QUALIFICATION

§60.2065 What are the operator training and qualification requirements?

(a) No CISWI unit can be operated unless a fully trained and qualified CISWI unit operator is accessible, either at the facility or available within 1 hour. The trained and qualified CISWI unit operator may operate the CISWI unit directly or be the direct supervisor of one or more other plant personnel who operate the unit. If all

qualified CISWI unit operators are temporarily unavailable, you must follow the procedures in §60.2095.

(b) Operator training and qualification must be obtained through a State-approved program or by completing the requirements included in paragraph (c) of this section.

(c) Training must be obtained by completing an incinerator operator training course that includes, at a minimum, the following elements:

(1) Training on the following subjects:

(i) Environmental concerns, including types of emissions;

(ii) Basic combustion principles, including products of combustion;

(iii) Operation of the specific type of incinerator to be used by the operator, including proper startup, waste charging, and shutdown procedures;

(iv) Combustion controls and monitoring;

(v) Operation of air pollution control equipment and factors affecting performance (if applicable);

(vi) Inspection and maintenance of the incinerator and air pollution control devices;

(vii) Actions to correct malfunctions or conditions that may lead to malfunction;

(viii) Bottom and fly ash characteristics and handling procedures;

(ix) Applicable Federal, State, and local regulations, including Occupational Safety and Health Administration workplace standards;

(x) Pollution prevention; and

(xi) Waste management practices.

(2) An examination designed and administered by the instructor.

(3) Written material covering the training course topics that serve as reference material following completion of the course.

§60.2070 When must the operator training course be completed?

The operator training course must be completed by the later of three dates:

(a) Six months after your CISWI unit starts up.

(b) One year after promulgation of this subpart.

(c) The date before an employee assumes responsibility for operating the CISWI unit or assumes responsibility for supervising the operation of the CISWI unit.

§60.2075 How do I obtain my operator qualification?

(a) You must obtain operator qualification by completing a training course that satisfies the criteria under §60.2065(b).

(b) Qualification is valid from the date on which the

training course is completed and the operator successfully passes the examination required under §60.2065(c)(2).

§60.2080 How do I maintain my operator qualification?

To maintain qualification, you must complete an annual review or refresher course covering, at a minimum, the following:

- (a) Update of regulations.
- (b) Incinerator operation, including startup and shutdown procedures, waste charging, and ash handling.
- (c) Inspection and maintenance.
- (d) Responses to malfunctions or conditions that may lead to malfunction.
- (e) Discussion of operating problems encountered by attendees.

§60.2085 How do I renew my lapsed operator qualification?

You must renew a lapsed operator qualification by one of the following methods:

- (a) For a lapse of less than 3 years, you must complete a standard annual refresher course described in §60.2080.
- (b) For a lapse of 3 years or more, you must repeat the initial qualification requirements in §60.2075(a).

§60.2090 What site-specific documentation is required?

- (a) You must maintain documentation at the facility that addresses the following:

(1) Summary of the applicable standards under this subpart.

(2) Procedures for receiving, handling, and charging waste.

(3) Incinerator startup, shutdown, and malfunction procedures.

(4) Procedures for maintaining proper combustion air supply levels.

(5) Procedures for operating the incinerator and associated air pollution control systems within the standards established under this subpart.

(6) Procedures for monitoring incinerator operating parameters.

(7) Reporting and recordkeeping procedures.

(8) The waste management plan required under §§60.2050 through 60.2060.

(9) Procedures for handling ash.

(b) You must establish a program for reviewing the information listed in paragraph (a) of this section with each incinerator operator.

(1) The initial review of the information listed in paragraph (a) of this section must be conducted within 6 months after the effective date of this subpart or prior to an employee's assumption of responsibilities for operation of the CISWI unit, whichever date is later.

(2) Subsequent reviews of the information listed in paragraph (a) of this section must be conducted not later than 12 months following the previous review.

(c) The information listed in paragraph (a) of this section must be kept in a readily accessible location for all CISWI unit operators. This information, along with records of training must be available for inspection by the EPA or its delegated enforcement agent upon request.

§60.2095 What if all the qualified operators are temporarily unavailable?

If all qualified operators are temporarily unavailable, you must meet one of two criteria, depending on the length of time that a qualified operator is away:

(a) When all qualified operators are unavailable for more than 8 hours, but less than 2 weeks, the CISWI unit may be operated by other plant personnel familiar with the operation of the CISWI unit. However, you must record the period when all qualified operators were unavailable and include this information in the annual report as specified under §60.2190.

(b) When all qualified operators are unavailable for 2 weeks or more, you must take two actions:

(1) Notify the Administrator in writing within 10 days. In the notice, state what caused the absence and what you are doing to ensure that a qualified operator is

available.

(2) Submit a status report and corrective action summary to the Administrator every 4 weeks. If the Administrator notifies you that the status report and corrective action summary are disapproved, the CISWI unit may continue operation for 90 days, then must cease operation. If corrective actions are taken within the 90-day period and the Administrator withdraws the disapproval, the CISWI unit may continue operation.

EMISSION LIMITS

§60.2100 What pollutants are regulated by this subpart?

Ten pollutants are regulated:

- (a) Cadmium.
- (b) Carbon monoxide.
- (c) Dioxins/furans.
- (d) Hydrogen chloride.
- (e) Lead.
- (f) Mercury.
- (g) Opacity.
- (h) Oxides of nitrogen.
- (i) Particulate matter.
- (j) Sulfur dioxide.

§60.2105 What emission limits must I meet? By when?

You must meet the emission limits specified in table 1

of this subpart. You must meet these limits 60 days after your CISWI unit reaches the charge rate at which it will operate but no later than 180 days after its initial startup.

§60.2110 What happens during periods of startup, shutdown, and malfunction?

(a) The standards of this subpart apply at all times except during CISWI unit startups, shutdowns, or malfunctions.

(b) Each startup, shutdown, or malfunction must last no longer than 3 hours.

STACK TESTING AND COMPLIANCE

§60.2115 What types of stack tests must I conduct?

(a) You must conduct an initial stack test to measure the emission levels of the pollutants listed in table 1 of this subpart (except for carbon monoxide and oxides of nitrogen) within 60 days after your CISWI unit reaches the charge rate at which it will operate, but no later than 180 days after its initial startup.

(b) You must conduct annual stack tests for particulate matter, hydrogen chloride, and opacity within 12 months following the initial stack test. Conduct subsequent annual stack tests within 12 months following the previous one.

§60.2120 How are the stack test data used?

You use results of stack tests to demonstrate compliance with the emission limits in table 1 of this subpart.

§60.2125 May I conduct stack testing less often?

(a) You can test less often for a given pollutant if you have test data for at least 3 years, and all stack tests for the pollutant (particulate matter, hydrogen chloride, or opacity) over 3 consecutive years show that you comply with the emission limit. In this case, you do not have to conduct a stack test for that pollutant for the next 2 years. You must do a stack test during the third year and no more than 36 months following the previous stack test.

(b) If your CISWI unit continues to meet the emission limit for particulate matter, hydrogen chloride, or opacity, you may choose to conduct stack tests for these pollutants every third year, but each such test must be within 36 months of the previous stack test.

(c) If a stack test shows noncompliance with an emission limit for particulate matter, hydrogen chloride, or opacity, you must conduct annual stack tests for that pollutant until all stack tests over a 3-year period show compliance.

§60.2130 How do I conduct the initial stack test?

You must conduct an initial stack test for each CISWI

unit as required under §60.2115 to determine compliance with the emission limits using the test methods listed in table 1 of this subpart and the procedures listed in paragraphs (a) through (e) of this section. The use of the bypass stack during a stack test invalidates the stack test.

(a) All stack tests must consist of a minimum of three test runs conducted under conditions representative of normal operations.

(b) All stack tests must be conducted using the minimum run duration specified in the test method.

(c) Method 1 of appendix A of this part must be used to select the sampling location and number of traverse points.

(d) Method 3 or 3A of appendix A of this part must be used for gas composition analysis, including measurement of oxygen concentration. Method 3 or 3A of appendix A of this part must be used simultaneously with each method.

(e) The pollutant concentrations must be adjusted to 7 percent oxygen using the following equation:

$$C_{adj} = C_{meas} (20.9-7)/(20.9-\%O_2)$$

Where:

C_{adj} = pollutant concentration adjusted to 7 percent oxygen;

C_{meas} = pollutant concentration measured on a dry basis;

$(20.9-7)$ = 20.9 percent oxygen - 7 percent oxygen (defined oxygen correction basis);

20.9 = oxygen concentration in air, percent; and

%O₂ = oxygen concentration measured on a dry basis,
percent.

§60.2135 What are my operating parameter requirements?

(a) If you are using a wet scrubber to comply, you must:

(1) Establish the appropriate maximum and minimum site specific operating parameters indicated in table 2 of this subpart during the initial stack test; and

(2) Following the date on which the initial stack test is completed, you must not operate the CISWI unit above any of the applicable maximum operating parameters or below any of the applicable minimum operating parameters listed in table 2 of this subpart. Parameters must be measured and calculated as 3-hour rolling averages (calculated each hour as the average of the previous 3 operating hours) at all times except during periods of startup, shutdown, and malfunction. Operating parameter limits do not apply during stack tests.

(b) If you are using an air pollution control device other than a wet scrubber to comply with the emission limits under §60.2105, you must petition the Administrator for other site-specific operating parameters to be established during the initial stack test and continuously monitored thereafter. You must not conduct the initial stack test

until after the petition has been approved by the Administrator.

§60.2140 How do I determine compliance?

(a) Compliance with the emission limits is determined by the initial and the annual stack tests.

(b) Operation above the established maximum or below the established minimum operating parameter(s) constitutes a violation of established operating parameter requirements. Three-hour rolling average values are used to determine compliance unless a different averaging period is established under §60.2135(b).

§60.2145 May I conduct a repeat stack test to establish new operating parameters?

Yes. You may conduct a repeat stack test at any time to establish new values for the operating parameters. The Administrator may request a repeat stack test at any time.

MONITORING

§60.2150 What monitoring equipment must I install and what parameters must I monitor?

(a) You must install, calibrate (to manufacturers' specifications), maintain, and operate devices (or establish methods) for monitoring the applicable maximum and minimum operating parameters listed in table 2 of this subpart. These devices (or methods) must measure and record values

for these operating parameters at the frequencies indicated in table 2 of this subpart at all times except during periods of startup, shutdown, and malfunction.

(b) You must also install, calibrate (to manufacturers' specifications), maintain, and operate a device or establish a procedure for measuring the use of the bypass stack including date, time, and duration.

(c) If you are using something other than a wet scrubber to comply with the emission limits under §60.2105 you must install, calibrate (to the manufacturers' specifications), maintain, and operate the equipment necessary to monitor the site-specific operating parameters established using the procedures in §60.2135(b).

§60.2155 Is there a minimum amount of monitoring data I must obtain?

Yes. You must obtain monitoring data at all times during CISWI unit operation except as required in §60.2135 or during periods of monitoring equipment malfunction, calibration, or repair. At a minimum, valid monitoring data must be obtained for 75 percent of the CISWI unit operating hours, per calendar day, for 90 percent of the CISWI unit operating days, per calendar quarter, that the CISWI unit is burning solid waste.

RECORDKEEPING AND REPORTING

§60.2160 What records must I keep?

You must maintain the following information (as applicable) for a period of at least 5 years:

(a) Calendar date of each record.

(b) Records of the following data:

(1) CISWI unit charge dates, times, weights, and hourly charge rates.

(2) Liquor flow rate to the wet scrubber inlet during each minute of operation, as applicable.

(3) Horsepower or amperage to the wet scrubber during each minute of operation, as applicable.

(4) Pressure drop across the wet scrubber system during each minute of operation, as applicable.

(5) Liquor pH as introduced to the wet scrubber during each minute of operation, as applicable.

(6) Records indicating use of the bypass stack, including dates, times, durations, reasons, and corrective actions taken.

(7) For affected CISWI units that establish operating parameters for controls other than wet scrubbers under §60.2135(b), you must maintain all operating parameter data collected.

(c) Identification of calendar dates for which the minimum amount of data on operating parameters specified under paragraph (b) of this section have not been obtained.

The minimum amount of data is specified in §60.2155.

Identify the operating parameters not measured, reasons for not obtaining the data, and a description of corrective actions taken.

(d) Identification of calendar dates, times, and durations of malfunctions, and a description of the malfunction and the corrective action taken.

(e) Identification of calendar dates for which data on operating parameters specified under paragraph (b) of this section exceeded the applicable limits, with a description of the exceedances, reasons for such exceedances, and a description of corrective actions taken. Three-hour rolling average values must be used to determine operating parameter exceedances, unless a different averaging period is established under §60.2135(b).

(f) The results of the initial, annual, and any subsequent stack tests conducted to determine compliance with the emission limits and/or to establish operating parameters, as applicable. Retain a copy of the complete test report including calculations.

(g) All documentation produced as a result of the siting requirements of §60.2045.

(h) Records showing the names of CISWI unit operators who have completed review of the information in §60.2090(a) as required by §60.2090(b), including the date of the

initial review and all subsequent annual reviews.

(i) Records showing the names of the CISWI operators who have completed the operator training requirements under §60.2065, including documentation of training and the dates of the training.

(j) Records showing the names of the CISWI operators who have met the criteria for qualification under §60.2075, and the dates of their qualification, and all subsequent renewals of such qualifications.

(k) Records of calibration of any monitoring devices as required under §60.2150.

(l) Equipment vendor specifications and related operation and maintenance requirements for the incinerator, emission controls, and monitoring equipment.

§60.2165 Where must I keep my records?

All records must be maintained onsite in either paper copy or computer-readable format that can be printed upon request, unless an alternative format is approved by the Administrator.

§60.2170 What must I submit prior to commencing construction?

You must submit a notification prior to commencing construction that includes the following information:

(a) A statement of intent to construct.

(b) The anticipated date of commencement of

construction.

(c) All documentation produced as a result of the siting requirements of §60.2045.

(d) The waste management plan as specified in §§60.2050 through 60.2060.

§60.2175 What information must I submit prior to initial startup?

You must submit the information specified in paragraphs (a) through (d) of this section prior to initial startup.

(a) The type(s) of waste to be burned.

(b) The maximum design waste burning capacity.

(c) The anticipated maximum charge rate.

(d) If applicable, the petition for site-specific operating parameters under §60.2135.

(e) The anticipated date of initial start-up.

§60.2180 What information must I submit following my initial stack test?

You must submit the information specified in paragraphs (a) and (b) of this section no later than 60 days following the initial stack test. All reports must be signed by the facilities manager.

(a) The complete test report for the initial stack test results obtained under §60.2130, as applicable.

(b) The values for the site-specific operating

parameters established in §60.2135.

§60.2185 When must I submit my annual report?

You must submit an annual report no later than 12 months following the submission of the information in §60.2180. You must submit subsequent reports no more than 12 months following the previous report. (Once the unit is subject to permitting requirements under title V of the Clean Air Act, you may be required by the permit to submit these reports semiannually.)

§60.2190 What information must I include in my annual report?

The annual report required under §60.2185 must include the information specified in paragraphs (a) through (f) of this section. All reports must be signed by the facility manager.

(a) The values for the site-specific operating parameters established pursuant to §60.2135.

(b) The highest maximum operating parameter and the lowest minimum operating parameter, as applicable, for each operating parameter recorded for the calendar year being reported.

(c) Information recorded under §60.2160 (c) through (e) for the calendar year being reported. If no exceedances or malfunctions were reported, a statement that no exceedances occurred during the reporting period.

(d) If a stack test was conducted during the reporting period, the results of that test.

(e) Any use of the bypass stack, the duration, reason for bypass, and corrective action taken.

(f) Documentation of periods when all qualified CISWI unit operators were unavailable for more than 8 hours.

§60.2195 What else must I report if I am out-of-compliance with these standards?

You must submit a report if any recorded 3-hour average parameter level is above the maximum value or below the minimum value established under this subpart, or if a stack test was conducted that exceeded any emission limit.

§60.2200 If an out-of-compliance report is required, when must I submit it?

If you are required to submit a report under §60.2195:

(a) For data collected during the first half of a calendar year (January 1 to June 30), submit your report by August 1 of that year.

(b) For data you collected during the second half of the calendar year (July 1 to December 31), submit the report by February 1 of the following year.

§60.2205 What must I include in the out-of-compliance reports?

In each report required under §60.2195, for any pollutant or parameter that exceeded the limits specified in

this subpart, include the following information:

- (a) The calendar date your unit exceeded the limits.
- (b) The averaged and recorded data for that date.
- (c) The reasons for exceeding the limits and your corrective actions.
- (d) A copy of the operating parameter monitoring data and any test report that documents the emission levels.

§60.2210 Are there any other notifications or reports that I must submit?

- (a) You must submit notifications as provided by §60.7.
- (b) If all qualified operators are unavailable for more than 2 weeks, you must submit a notification within 10 days. In addition, you must submit a status report and corrective action summary to the Administrator every 4 weeks.

§60.2215 In what form can I submit my reports?

Submit initial, annual, and semiannual electronic or paper reports, postmarked on or before the submittal due dates.

§60.2220 Can reporting dates be changed?

If the Administrator agrees, you may change the semiannual or annual reporting dates. See §60.19(c) for procedures to seek approval to change your reporting date.

AIR CURTAIN INCINERATORS THAT BURN 100 PERCENT**WOOD WASTES AND CLEAN LUMBER**§60.2225 What is an air curtain incinerator?

An air curtain incinerator operates by forcefully projecting a curtain of air across an open chamber or open pit in which combustion occurs. Incinerators of this type can be constructed above or below ground and with or without refractory walls and floor. (Air curtain incinerators are not to be confused with conventional combustion devices with enclosed fireboxes and controlled air technology such as mass burn, modular, and fluidized bed combustors.)

§60.2230 What are the emission limits for air curtain incinerators that burn 100 percent wood wastes and clean lumber?

(a) Within 60 days after your air curtain incinerator reaches the charge rate at which it will operate, but no later than 180 days after its initial startup, you must meet two limits:

(1) The opacity limit is 10 percent (6-minute average).

(2) The opacity limit is 35 percent (6-minute average) during the startup period that is within the first 30 minutes of operation.

(b) Except during malfunctions, the requirements of

this subpart apply at all times, and each malfunction must not exceed 3 hours.

§60.2235 How must I monitor opacity for air curtain incinerators that burn 100 percent wood wastes and clean lumber?

(a) Use Method 9 of appendix A of this part to determine compliance with the opacity limit.

(b) Conduct an initial test for opacity as specified in §60.8.

(c) After the initial test for opacity, conduct annual tests no more than 12 calendar months following the date of your previous test.

§60.2240 What are the recordkeeping and reporting requirements for air curtain incinerators that burn 100 percent wood wastes and clean lumber?

(a) Prior to commencing construction on your air curtain incinerator, submit three items:

(1) Notification of your intent to construct the air curtain incinerators.

(2) Your planned initial startup date.

(3) Types of materials you plan to burn in your air curtain incinerator.

(b) Keep records of results of all initial and annual opacity tests onsite in either paper copy or electronic format, unless the Administrator approves another format,

for at least 5 years.

(c) Make all records available for submittal to the Administrator or for an inspector's onsite review.

(d) You must submit the results (each 6-minute average) of the initial opacity tests no later than 60 days following the initial test. Submit annual opacity test results within 12 months following the previous report.

(e) Submit initial and annual opacity test reports as electronic or paper copy on or before the applicable submittal date.

(f) Keep a copy of the initial and annual reports onsite for a period of 5 years.

DEFINITIONS

§60.2245 What definitions must I know?

Terms used but not defined in this subpart are defined in the Clean Air Act and subpart A (General Provisions) of this part.

Administrator means the Administrator of the U.S. Environmental Protection Agency or his/her authorized representative or Administrator of a State Air Pollution Control Agency, if delegated by EPA.

Agricultural waste means vegetative agricultural materials such as nut and grain hulls and chaff (e.g., almond, walnut, peanut, rice, and wheat), bagasse, orchard

prunings, corn stalks, coffee bean hulls and grounds, and other vegetative waste materials generated as a result of agricultural operations.

Air curtain incinerator means an incinerator that operates by forcefully projecting a curtain of air across an open chamber or pit in which combustion occurs. Incinerators of this type can be constructed above or below ground and with or without refractory walls and floor. (Air curtain incinerators are not to be confused with conventional combustion devices with enclosed fireboxes and controlled air technology such as mass burn, modular, and fluidized bed combustors.)

Biomass fuel means untreated wood and wood products (e.g., trees, tree stumps, tree limbs, bark, lumber, sawdust, sanderdust, chips, scraps, slabs, millings, and shavings); vegetative agricultural and silvicultural materials, such as logging residues (slash), nut and grain hulls and chaff (e.g., almond, walnut, peanut, rice, and wheat), bagasse, orchard prunings, corn stalks, coffee bean hulls and grounds; and alcohol fuels derived from these materials. Biomass does not include: painted, pigment-stained, or pressure-treated materials (e.g., telephone poles and railroad ties); sewage sludge, paper mill sludge, fermentation tank bottoms, or other sludges; or construction, renovation, and demolition wastes. Pressure

treating compounds include, but are not limited to, chromate copper arsenate, pentachlorophenol, and creosote.

Calendar quarter means three consecutive months (nonoverlapping) beginning on: January 1, April 1, July 1, or October 1.

Calendar year means 365 consecutive days starting on January 1, and ending on December 31.

Clean lumber means wood or wood products that have been cut or shaped and include wet, air-dried, and kiln-dried wood products. Clean lumber does not include wood products that have been painted, pigment-stained, or pressure-treated by compounds such as chromate copper arsenate, pentachlorophenol, and creosote.

Clean wood means untreated wood or untreated wood products including clean lumber, tree stumps (whole or chipped), and tree limbs (whole or chipped). Clean wood does not include two items:

(1) Yard waste, which is defined elsewhere in this section.

(2) Construction, renovation, or demolition wastes.

Coal means all solid fuels classified as anthracite, bituminous, subbituminous, or lignite by the American Society of Testing and Materials in ASTM D388-77, Standard Specification for Classification of Coals by Rank (see §60.17), coal refuse, and petroleum coke. Synthetic fuels

derived from coal for the purpose of creating useful heat, including but not limited to solvent-refined coal, gasified coal, coal-oil mixtures, and coal-water mixtures, are included in this definition for the purposes of this subpart.

Coal refuse means any by-product of coal mining or coal cleaning operations with an ash content greater than 50 percent (by weight) and a heating value less than 13,900 kilojoules per kilogram (6,000 Btu per pound) on a dry basis.

Commercial and industrial solid waste incineration (CISWI) unit means an enclosed device using controlled flame combustion that burns solid waste or an air curtain incinerator that burns solid waste, and that is a distinct operating unit of any commercial or industrial facility. This definition includes field-erected, modular, and custom built incineration units (starved- or excess-air), and air curtain incinerators. The boundaries of a CISWI unit are defined as follows. The CISWI unit includes, but is not limited to, the commercial or industrial solid waste fuel feed system, grate system, flue gas system, and bottom ash. The CISWI unit does not include air pollution control equipment or the stack. The CISWI unit boundary starts at the commercial and industrial solid waste hopper (if applicable) and extends through two areas:

(1) The combustion unit flue gas system, which ends immediately after the last combustion chamber.

(2) The combustion unit bottom ash system, which ends at the truck loading station or similar equipment that transfers the ash to final disposal. It includes all ash handling systems connected to the bottom ash handling system.

Dioxins/furans means tetra- through octachlorinated dibenzo-p-dioxins and dibenzofurans.

Malfunction means any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner. Failures that are caused, in part, by poor maintenance or careless operation are not malfunctions.

Modification or modified CISWI unit means a CISWI unit you have changed later than 6 months after promulgation of this subpart and that meets one of two criteria:

(1) The cumulative cost of the changes over the life of the unit exceeds 50 percent of the original cost of building and installing the CISWI unit (not including the cost of land) updated to current costs (current dollars). To determine what systems are within the boundary of the CISWI unit used to calculate these costs, see the definition of CISWI unit.

(2) Any physical change in the CISWI unit or change in the method of operating it that increases the amount of any air pollutant emitted for which section 129 or section 111 of the Clean Air Act has established standards.

Natural gas means:

(1) A naturally occurring mixture of hydrocarbon and nonhydrocarbon gases found in geologic formations beneath the earth's surface, of which the principal constituent is methane.

(2) Liquid petroleum gas, as defined by the American Society of Testing and Materials in ASTM D1835-82, Standard Specification for Liquid Petroleum Gases (IBR-see §60.17).

Oil means crude oil or petroleum or a liquid or gaseous fuel derived from crude oil or petroleum, including distillate oil (Nos. 1-4) and residual oil (Nos. 5 and 6).

Particulate matter means total particulate matter emitted from CISWI units as measured by Method 5 or Method 29 of appendix A of this part.

Pathological waste means waste material consisting of only human or animal remains, anatomical parts, and/or tissue, the bags/containers used to collect and transport the waste material, and animal bedding (if applicable).

Reconstruction means rebuilding a CISWI unit and meeting two criteria:

(1) The reconstruction begins 6 months or more after

promulgation of this subpart.

(2) The cumulative cost of the construction over the life of the incineration unit exceeds 50 percent of the original cost of building and installing the CISWI unit (not including land) updated to current costs (current dollars). To determine what systems are within the boundary of the CISWI unit used to calculate these costs, see the definition of CISWI unit.

Refuse-derived fuel means a type of municipal solid waste produced by processing municipal solid waste through shredding and size classification. This includes all classes of refuse-derived fuel including two fuels:

(1) Low-density fluff refuse-derived fuel through densified refuse-derived fuel.

(2) Pelletized refuse-derived fuel.

Shutdown means the period of time after all waste has been combusted in the primary chamber.

Solid waste means, for the purpose of this subpart only, any solid, liquid, semisolid, or contained gaseous material, which is combusted, including but not limited to materials listed in paragraph (1) of this definition. Solid waste excludes fuels defined in paragraph (2) of this definition and materials specifically listed in paragraph (3) of this definition.

(1) The following materials are solid wastes,

regardless of the provisions in paragraph (2) of this definition:

(i) Any material which is combusted without energy recovery (i.e., where the material displaces other fuels to produce useful heat), except as provided in paragraph (3) of this definition.

(ii) Municipal solid waste, as defined in 40 CFR part 60, subpart Ea, subpart Eb, subpart AAAA and subpart BBBB.

(iii) Hospital waste, as defined in 40 CFR part 60, subpart Ec.

(iv) Medical/infectious waste, as defined in 40 CFR part 60, subpart Ec.

(v) Resource Conservation and Recovery Act hazardous wastes, as defined in 40 CFR part 261.

(2) The following materials are fuels when combusted in a device that incorporates energy recovery as part of its integral design (e.g., for the production of hot water or steam). The combustion chamber and the energy recovery system must be physically formed into one manufactured or assembled unit. A unit in which the combustion chamber and the energy recovery system are joined only by ducts or connections carrying flue gas is not integrally designed.

(i) Biomass fuel, coal, natural gas, and oil, as defined elsewhere in this section;

(ii) Materials that have a heat content of 5,000

Btu/lb or more as fired. This criterion applies to each individual feed stream to a combustion unit.

(3) The following materials are not solid waste when combusted for the primary purpose of recovering chemical constituents: pulping liquors (i.e., black liquor) that are reclaimed in a pulping liquor recovery process and reused in the pulping process; spent sulfuric acid used to produce virgin sulfuric acid; and wood and coal feedstock for the production of charcoal.

Standard conditions, when referring to units of measure, means a temperature of 68°F (20°C) and a pressure of 1 atmosphere (101.3 kilopascals).

Startup period means the period of time between the activation of the system and the first charge to the unit.

Total mass dioxins/furans or total mass means the total mass of tetra- through octachlorinated dibenzo-p-dioxins and dibenzofurans as determined using Method 23 of appendix A of this part.

Wet scrubber means an add-on air pollution control device that utilizes an alkaline scrubbing liquor to collect particulate matter (including nonvaporous metals and condensed organics) and/or to absorb and neutralize acid gases.

Yard waste means grass, grass clippings, bushes, shrubs, and clippings from bushes and shrubs. It comes from

residential, commercial/retail, institutional, or industrial sources as part of maintaining yards or other private or public lands. Yard waste does not include:

- (1) Construction, renovation, and demolition wastes.
- (2) Clean wood, which is defined elsewhere in this section.

Table 1 of Subpart CCCC – Emission Limits for New Sources

	You must meet these emission limits^a	Using these averaging times	And determining compliance using these methods
Cadmium	0.03 milligrams per dry standard cubic meter	3-run average (run duration specified in test method)	Stack test (Method 29 of appendix A of this part)
Carbon monoxide	157 parts per million by dry volume	Not applicable	Not required
Dioxins/furans (total mass basis)	0.37 nanograms per dry standard cubic meter	3-run average (run duration specified in test method)	Stack test (Method 23 of appendix A of this part)
Hydrogen chloride	62 parts per million by dry volume	3-run average (run duration specified in test method)	Stack test (Method 26 of appendix A of this part)
Lead	2.1 milligrams per dry standard cubic meter	3-run average (run duration specified in test method)	Stack test (Method 29 of appendix A of this part)
Mercury	0.005 milligrams per dry standard cubic meter	3-run average (run duration specified in test method)	Stack test (Method 29 of appendix A of this part)
Opacity	10 percent	6-minute averages	Stack test (Method 9 of appendix A of this part)
Oxides of nitrogen	388 parts per million by dry volume	Not applicable	Not required
Particulate matter	70 milligrams per dry standard cubic meter	3-run average (run duration specified in test method)	Stack test (Method 5 or 29 of appendix A of this part)
Sulfur dioxide	20 parts per million by dry volume	3-run average (run duration specified in test method)	Stack test (Method 6 of appendix A of this part)

^aAll emission limits are measured at 7 percent oxygen, dry basis at standard conditions.

**Table 2 of Subpart CCCC – Operating Parameters
to be Monitored and Minimum Recording
Frequencies for Wet Scrubbers**

You must monitor these operating parameters	Using these minimum frequencies		
	Data measurement	Data recording	Averaging time
Maximum operating parameters			
Maximum charge rate	continuous	every hour	3-hour rolling
Minimum operating parameters			
Minimum pressure drop across the wet scrubber, or minimum horsepower or amperage to wet scrubber	continuous	every minute	3-hour rolling
Minimum scrubber liquor flow rate	continuous	every minute	3-hour rolling
Minimum scrubber liquor pH	continuous	every minute	3-hour rolling

3. Part 60 is amended by adding subpart DDDD to read as follows:

Subpart DDDD--Emissions Guidelines and Compliance Times for Commercial and Industrial Solid Waste Incineration Units

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INTRODUCTION

§60.2500 What is the purpose of this subpart?

This subpart establishes emission guidelines and compliance schedules for the control of emissions from commercial and industrial solid waste incineration (CISWI) units. The pollutants addressed by these emission guidelines are listed in table 2 of this subpart. These emission guidelines are developed in accordance with sections 111(d) and 129 of the Clean Air Act and subpart B of this part.

§60.2505 Am I affected by this subpart?

(a) If you are the Administrator of an air quality program in a State or United States protectorate with one or more existing CISWI units that commenced construction on or before [insert date of publication of this proposed rule in the FEDERAL REGISTER], you must submit a State plan to EPA that implements the emission guidelines contained in this subpart.

(b) You must submit the State plan to EPA within 1

year after the promulgation of this subpart.

§60.2510 Is a State plan required for all States?

No. You are not required to submit a State plan if there are no existing CISWI units in your State and you submit a negative declaration letter in place of the State plan.

§60.2515 What must I include in my State plan?

(a) You must include nine items in your State plan:

(1) Inventory of affected CISWI units, including those that have ceased operation but have not been dismantled.

(2) Inventory of emissions from affected CISWI units in your State.

(3) Compliance schedules for each affected CISWI unit.

(4) Emission limits, operator training and qualification requirements, a waste management plan, and operating parameter requirements for affected CISWI units that are at least as protective as the emission guidelines contained in this subpart.

(5) Stack testing, recordkeeping, and reporting requirements.

(6) Transcript of the public hearing on the State plan.

(7) Provision for State progress reports to EPA.

(8) Identification of enforceable State mechanisms that you selected for implementing the emission guidelines

of this subpart.

(9) Demonstration of your State's legal authority to carry out the sections 111(d) and 129 State plan.

(b) Your State plan may deviate from the format and content of the emission guidelines contained in this subpart. However, if your State plan does deviate, you must demonstrate that your State plan is at least as protective as the emission guidelines contained in this subpart. Your State plan must address regulatory applicability, increments of progress for retrofit, operator training and qualification, a waste management plan, emission limits, stack testing, operating parameter requirements, monitoring, recordkeeping and reporting, and air curtain incinerator requirements.

(c) You must follow the requirements of subpart B of this part (Adoption and Submittal of State Plans for Designated Facilities) in your State plan.

§60.2520 Is there an approval process for my State plan?

Yes. The EPA will review your State plan according to §60.27.

§60.2525 What if my State plan is not approvable?

If you do not submit an approvable State plan (or a negative declaration letter) within 2 years after promulgation of this subpart, EPA will develop a Federal plan according to §60.27 to implement the emission

guidelines contained in this subpart. Owners and operators of CISWI units not covered by an approved State plan must comply with the Federal plan. The Federal plan is an interim action and will be automatically withdrawn when your State plan is approved.

§60.2530 Is there an approval process for a negative declaration letter?

No. The EPA has no formal review process for negative declaration letters. Once your negative declaration letter has been received, EPA will place a copy in the public docket and publish a notice in the Federal Register. If, at a later date, an existing CISWI unit is found in your State, the Federal plan implementing the emission guidelines contained in this subpart would automatically apply to that CISWI unit until your State plan is approved.

§60.2535 What compliance schedule must I include in my State plan?

(a) Your State plan must include compliance schedules that require CISWI units to achieve final compliance as expeditiously as practicable after approval of the State plan but not later than the earlier of two dates:

(1) Five years after [the date of promulgation of the final rule].

(2) Three years after the effective date of State plan approval.

(b) For compliance schedules more than 1 year following the effective date of State plan approval, State plans must include dates for enforceable increments of progress as specified in §60.2580.

§60.2540 Are there any State plan requirements for this subpart that apply instead of the requirements specified in subpart B?

Yes. Subpart B established general requirements for developing and processing section 111(d) plans. This subpart applies instead of the requirements in subpart B of this part for the following:

(a) State plans developed to implement this subpart must be as protective as the emission guidelines contained in this subpart. State plans must require all CISWI units to comply within 5 years after promulgation of this subpart or 3 years after the effective date of State plan approval, whichever is sooner. This applies instead of the option for case-by-case less stringent emission standards and longer compliance schedules in §60.24(f).

(b) State plans developed to implement this subpart are required to include two increments of progress for the affected CISWI units. These two minimum increments are the final control plan submittal date and final compliance date in §60.21(h)(1) and (5). This applies instead of the requirement of §60.24(e)(1) that would require a State plan

to include all five increments of progress for all CISWI units.

§60.2545 Does this subpart directly affect CISWI unit owners and operators in my State?

(a) No. This subpart does not directly affect CISWI unit owners and operators in your State. However, CISWI unit owners and operators must comply with the State plan you develop to implement the emission guidelines contained in this subpart. Some States may choose to incorporate the emission guidelines contained in this subpart into their State plans by direct incorporation by reference. Others may want to include the model rule text directly in their State plan.

(b) If you do not submit an approvable plan to implement and enforce the guidelines contained in this subpart within 2 years after promulgation of this subpart, the EPA will implement and enforce a Federal plan, as provided in §60.2525, to ensure that each unit within your State reaches compliance with all the provisions of this subpart within 5 years after promulgation of this subpart.

APPLICABILITY OF STATE PLANS

§60.2550 What CISWI units must I address in my State plan?

(a) Your State plan must address all existing CISWI units in your State that commenced construction on or before

[insert date of publication of this proposed rule in the FEDERAL REGISTER].

(b) If the owner or operator of a CISWI unit makes changes that meet the definition of modification or reconstruction 6 months (or later) after promulgation of subpart CCCC of this part (New Source Performance Standards for Commercial and Industrial Solid Waste Incineration Units), the CISWI unit becomes subject to subpart CCCC of this part and the State plan no longer applies to that unit.

(c) If the owner or operator of a CISWI unit makes physical or operational changes to an existing CISWI unit primarily to comply with your State plan, subpart CCCC of this part does not apply to that unit. Such changes do not qualify as modifications or reconstructions under subpart CCCC of this part.

(d) Your State plan must address all incineration units that meet all of the following criteria:

(1) The incineration unit burns solid waste as defined in §60.2850 - "What definitions must I know?".

(2) The incineration unit burns less than 90 percent by weight (instantaneous basis) pathological waste as defined in §60.2850.

(3) The incineration unit burns less than 90 percent by weight (instantaneous basis) agricultural wastes as defined in §60.2850.

(4) The incineration unit is not regulated under subpart Ea of this part (Standards of Performance for Municipal Waste Combustors), subpart Eb of this part (Standards of Performance for Municipal Waste Combustors for Which Construction is Commenced After September 20, 1994), subpart Cb of this part (Emission Guidelines and Compliance Times for Municipal Waste Combustors That are Constructed on or Before December 19, 1995), subpart AAAA of this part (Standards of Performance of New Stationary Sources: Small Municipal Waste Combustion Units), or subpart BBBB of this part (Emission Guidelines: Small Municipal Waste Combustion Units).

(5) The incineration unit is not regulated under subpart Ec of this part (Standards of Performance for Hospital/Medical/Infectious Waste Incinerators for Which Construction is Commenced After June 20, 1996) or subpart Ce of this part (Emission Guidelines and Compliance Times for Hospital/Medical/Infectious Waste Incinerators).

§60.2555 Are any CISWI units exempt from my State plan?

Yes. This subpart allows the following statutory exemptions:

(a) Small power production facilities. A unit is exempt from your State plan if four requirements are met:

(1) The unit qualifies as a small power production facility under section 3(17)(C) of the Federal Power Act (16

U.S.C. 796(17)(C)).

(2) The unit combusts homogeneous waste (not including refuse-derived fuel) to produce electricity.

(3) You are notified by the owner or operator that the unit qualifies for this exemption.

(4) You receive documentation from the owner or operator that the unit qualifies for this exemption.

(b) Cogeneration facilities. A unit is exempt from your State plan if four requirements are met:

(1) The unit qualifies as a cogeneration facility under section 3(18)(B) of the Federal Power Act (16 U.S.C. 796(18)(B)).

(2) The unit combusts homogeneous waste (not including refuse-derived fuel) to produce electricity and steam or other forms of energy used for industrial, commercial, heating, or cooling purposes.

(3) You are notified by the owner or operator that the unit qualifies for this exemption.

(4) You receive documentation from the owner or operator that the unit qualifies for this exemption.

(c) Hazardous waste combustion units. A unit is exempt from your State plan if the unit has received a permit under section 3005 of the Solid Waste Disposal Act.

(d) Materials recovery units. A unit is exempt from your State plan if the unit combusts waste for the primary

purpose of recovering metals. This includes primary and secondary smelters.

(e) Air curtain incinerators. If an air curtain incinerator (see §60.2850 for definition) combusts 100 percent wood waste and clean lumber, then the unit must meet only the requirements under "Model Rule - Air Curtain Incinerators That Burn 100 Percent Wood Wastes and Clean Lumber" (§§60.2785 through 60.2845).

USE OF MODEL RULE

§60.2560 What is the purpose of the "model rule" in this subpart?

(a) The model rule provides the emission guidelines requirements in a standard regulation format. You must develop a State plan that is at least as protective as the model rule. You may use the model rule language as part of your State plan. Alternative language may be used in your State plan if you demonstrate that the alternative language is at least as protective as the model rule contained in this subpart.

(b) In the "model rule" of §§60.2575 to 60.2850, "you" means the owner or operator of a CISWI unit.

§60.2565 How does the model rule relate to the required elements of my State plan?

Use the model rule to satisfy the State plan

requirements specified in §60.2515(a)(4) and (5).

§60.2570 What are the principal components of the model rule?

The model rule contains seven major components, as follows:

- (a) Increments of progress toward compliance.
- (b) Waste management plan.
- (c) Operator training and qualification.
- (d) Emission limits.
- (e) Stack testing and compliance.
- (f) Monitoring.
- (g) Recordkeeping and reporting.

MODEL RULE – INCREMENTS OF PROGRESS

§60.2575 What are my requirements for meeting increments of progress and achieving final compliance?

If you plan to achieve compliance more than 1 year following the effective date of State plan approval, you must meet two increments of progress:

- (a) Submit a final control plan.
- (b) Achieve final compliance.

§60.2580 When must I complete each increment of progress?

Table 1 of this subpart specifies compliance dates for each of the increments of progress.

§60.2585 What must I include in the notifications of

achievement of increments of progress?

Your notification of achievement of increments of progress must include three items:

(a) Notification that the increment of progress has been achieved.

(b) Any items required to be submitted with each increment of progress (see §60.2600).

(c) Signature of the owner or operator of the CISWI unit.

§60.2590 When must I submit the notifications of achievement of increments of progress?

Notifications for achieving increments of progress must be postmarked no later than 10 business days after the compliance date for the increment.

§60.2595 What if I do not meet an increment of progress?

If you fail to meet an increment of progress, you must submit a notification to the Administrator postmarked within 10 business days after the date for that increment of progress in table 1 of this subpart. You must inform the Administrator that you did not meet the increment and you must continue to submit reports each subsequent calendar month until the increment of progress is met.

§60.2600 How do I comply with the increment of progress for submittal of a control plan?

For your control plan increment of progress, you must

satisfy two requirements:

(a) Submit the final control plan that includes the following:

(1) A description of the devices for air pollution control and process changes that you will use to comply with the emission limits and other requirements of this subpart.

(2) The type(s) of waste to be burned.

(3) The maximum design waste burning capacity.

(4) The anticipated maximum charge rate.

(5) If applicable, the petition for site-specific operating parameters under §60.2705(b).

(b) Maintain an onsite copy of the final control plan.
§60.2605 How do I comply with the increment of progress for achieving final compliance?

For the final compliance increment of progress, you must complete all process changes and retrofit construction of control devices, as specified in the final control plan, so that, if the affected CISWI unit is brought online, all necessary process changes and air pollution control devices would operate as designed.

§60.2610 What must I do if I close my CISWI unit and then restart it?

(a) If you close your CISWI unit but will restart it prior to the final compliance date in your State plan, you must meet the increments of progress specified in §60.2575.

(b) If you close your CISWI unit but will restart it after your final compliance date, you must complete emission control retrofits and meet the emission limits on the date your unit restarts operation.

§60.2615 What must I do if I plan to permanently close my CISWI unit and not restart it?

If you plan to close your CISWI unit rather than comply with the State plan, submit a closure notification, including the date of closure, to the Administrator by the date your final control plan is due.

MODEL RULE - WASTE MANAGEMENT PLAN

§60.2620 What is a waste management plan?

A waste management plan is a written plan that identifies both the feasibility and the approach to separate certain components of solid waste from the waste stream in order to reduce the amount of toxic emissions from incinerated waste.

§60.2625 When must I submit my waste management plan?

You must submit a waste management plan no later than the date specified in table 1 for submittal of the final control plan.

§60.2630 What should I include in my waste management plan?

A waste management plan may include, but is not limited to, the reduction or separation of waste-stream elements

such as paper, cardboard, plastics, glass, batteries, or metals; or the use of recyclable materials. The waste management plan may include different goals or approaches for different areas or departments of the facility and need not include new waste management goals for every waste stream. It should identify, where possible, reasonably available additional waste management measures, taking into account the effectiveness of waste management measures already in place, the costs of additional measures, the emission reductions expected to be achieved, and any other environmental or energy impacts they might have.

MODEL RULE - OPERATOR TRAINING AND QUALIFICATION

§60.2635 What are the operator training and qualification requirements?

(a) No CISWI unit can be operated unless a fully trained and qualified CISWI unit operator is accessible, either at the facility or available within 1 hour. The trained and qualified CISWI unit operator may operate the CISWI unit directly or be the direct supervisor of one or more other plant personnel who operate the unit. If all qualified CISWI unit operators are temporarily unavailable, you must follow the procedures in §60.2665.

(b) Operator training and qualification must be obtained through a State-approved program or by completing

the requirements included in paragraph (c) of this section.

(c) Training must be obtained by completing an incinerator operator training course that includes, at a minimum, the following elements:

(1) Training on the following subjects:

(i) Environmental concerns, including types of emissions.

(ii) Basic combustion principles, including products of combustion.

(iii) Operation of the specific type of incinerator to be used by the operator, including proper startup, waste charging, and shutdown procedures.

(iv) Combustion controls and monitoring.

(v) Operation of air pollution control equipment and factors affecting performance (if applicable).

(vi) Inspection and maintenance of the incinerator and air pollution control devices.

(vii) Actions to correct malfunctions or conditions that may lead to malfunction.

(viii) Bottom and fly ash characteristics and handling procedures.

(ix) Applicable Federal, State, and local regulations, including Occupational Safety and Health Administration workplace standards.

(x) Pollution prevention.

(xi) Waste management practices.

(2) An examination designed and administered by the instructor.

(3) Written material covering the training course topics that can serve as reference material following completion of the course.

§60.2640 When must the operator training course be completed?

The operator training course must be completed by the later of three dates:

(a) The final compliance date (Increment 2).

(b) Six months after CISWI unit start up.

(c) Six months after an employee assumes responsibility for operating the CISWI unit or assumes responsibility for supervising the operation of the CISWI unit.

§60.2645 How do I obtain my operator qualification?

(a) You must obtain operator qualification by completing a training course that satisfies the criteria under §60.2635(b).

(b) Qualification is valid from the date on which the training course is completed, and the operator successfully passes the examination required under §60.2635(c)(2).

§60.2650 How do I maintain my operator qualification?

To maintain qualification, you must complete an annual

review or refresher course covering, at a minimum, the following:

- (a) Update of regulations.
- (b) Incinerator operation, including startup and shutdown procedures, waste charging, and ash handling.
- (c) Inspection and maintenance.
- (d) Responses to malfunctions or conditions that may lead to malfunction.
- (e) Discussion of operating problems encountered by attendees.

§60.2655 How do I renew my lapsed operator qualification?

You must renew a lapsed operator qualification by one of the following methods:

(a) For a lapse of less than 3 years, you must complete a standard annual refresher course described in §60.2650.

(b) For a lapse of 3 years or more, you must repeat the initial qualification requirements in §60.2645(a).

§60.2660 What site-specific documentation is required?

(a) You must maintain documentation at the facility that addresses the following:

- (1) Summary of the applicable standards under this subpart.
- (2) Procedures for receiving, handling, and charging waste.

(3) Incinerator startup, shutdown, and malfunction procedures.

(4) Procedures for maintaining proper combustion air supply levels.

(5) Procedures for operating the incinerator and associated air pollution control systems within the standards established under this subpart.

(6) Procedures for monitoring incinerator operating parameters.

(7) Reporting and recordkeeping procedures.

(8) Procedures for handling ash.

(9) The waste management plan required under §§60.2620 through 60.2630.

(b) You must establish a program for reviewing the information listed in paragraph (a) of this section with each CISWI unit operator.

(1) The initial review of the information listed in paragraph (a) of this section must be conducted by the later of:

(i) The final compliance date (Increment 2).

(ii) Six months after CISWI unit start up.

(iii) Six months after being assigned to operate CISWI unit.

(2) Subsequent reviews of the information listed in paragraph (a) of this section must be conducted no later

than 12 months following the previous review.

(c) The information listed in paragraph (a) of this section must be kept in a readily accessible location for all CISWI unit operators. This information, along with records of training, must be available for inspection by the EPA or its delegated enforcement agent upon request.

§60.2665 What if all the qualified operators are temporarily unavailable?

If all qualified operators are temporarily unavailable, you must meet one of two criteria, depending on the length of time that a qualified operator is away:

(a) When all qualified operators are unavailable for more than 8 hours, but less than 2 weeks, the CISWI unit may be operated by other plant personnel familiar with the operation of the CISWI unit. However, you must record the period when all qualified operators were unavailable and include this information in the annual report as specified under §60.2750(g).

(b) When all qualified operators are unavailable for 2 weeks or more, you must take two actions:

(1) Notify the Administrator in writing within 10 days. In the notice, state what caused the absence and what you are doing to ensure that a qualified operator is available.

(2) Submit a status report and corrective action

summary to the Administrator every 4 weeks. If the Administrator notifies you that the status report and corrective action summary are disapproved, the CISWI unit may continue operation for 90 days, then must cease operation. If corrective actions are taken within the 90-day period and the Administrator withdraws the disapproval, the CISWI unit may continue operation.

MODEL RULE - EMISSION LIMITS

§60.2670 What pollutants are regulated by this subpart?

Ten pollutants are regulated:

- (a) Cadmium.
- (b) Carbon monoxide.
- (c) Dioxins/furans.
- (d) Hydrogen chloride.
- (e) Lead.
- (f) Mercury.
- (g) Opacity.
- (h) Oxides of nitrogen.
- (i) Particulate matter.
- (j) Sulfur dioxide.

§60.2675 What emission limits must I meet? By when?

After the date the initial stack test is required or completed (whichever is earlier), you must meet the emission limits specified in table 2 of this subpart.

§60.2680 What happens during periods of startup, shutdown, and malfunction?

(a) The standards of this subpart apply at all times except during CISWI unit startups, shutdowns, or malfunctions.

(b) Each startup, shutdown, or malfunction must last no longer than 3 hours.

MODEL RULE - STACK TESTING AND COMPLIANCE

§60.2685 What types of stack tests must I conduct?

(a) You must conduct an initial stack test to measure the emission levels of the pollutants listed in table 2 of this subpart (except for carbon monoxide and oxides of nitrogen) no later than 180 days after your final compliance date. Your final compliance date is specified in table 1 of this subpart.

(b) You must conduct annual stack tests for particulate matter, hydrogen chloride, and opacity beginning within 12 months following the initial stack test. Conduct subsequent annual stack tests within 12 months following the previous one.

§60.2690 How are the stack test data used?

You use results of stack tests to demonstrate compliance with the emission limits in table 2 of this subpart.

§60.2695 May I conduct stack testing less often?

(a) You may test less often for a given pollutant if you have test data for at least 3 years, and all stack tests for the pollutant (particulate matter, hydrogen chloride, or opacity) over 3 consecutive years show that you comply with the emission limit. In this case, you do not have to conduct a stack test for that pollutant for the next 2 years. You must do a stack test during the third year and no more than 36 months following the previous stack test.

(b) If your CISWI unit continues to meet the emission limit for particulate matter, hydrogen chloride, or opacity, you may choose to conduct stack tests for these pollutants every third year, but each such test must be within 36 months of the previous stack test.

(c) If a stack test shows noncompliance with an emission limit for particulate matter, hydrogen chloride, or opacity, you must conduct annual stack tests for that pollutant until all stack tests over a 3-year period show compliance.

§60.2700 How do I conduct the initial stack test?

You must conduct an initial stack test for each CISWI unit as required under §60.2685(a) to determine compliance with the emission limits using the test methods listed in table 2 of this subpart and the procedures listed in paragraphs (a) through (e) of this section. The use of the

bypass stack during a stack test invalidates the stack test.

(a) All stack tests must consist of a minimum of three test runs conducted under conditions representative of normal operations.

(b) All stack tests must be conducted using the minimum run duration specified in the test method.

(c) Method 1 of appendix A of this part must be used to select the sampling location and number of traverse points.

(d) Method 3 or 3A of appendix A of this part must be used for gas composition analysis, including measurement of oxygen concentration. Method 3 or 3A of appendix A of this part must be used simultaneously with each method.

(e) The pollutant concentrations must be adjusted to 7 percent oxygen using the following equation:

$$C_{adj} = C_{meas} (20.9-7)/(20.9-\%O_2)$$

Where:

C_{adj} = pollutant concentration adjusted to 7 percent oxygen;

C_{meas} = pollutant concentration measured on a dry basis;

$(20.9-7)$ = 20.9 percent oxygen - 7 percent oxygen (defined oxygen correction basis);

20.9 = oxygen concentration in air, percent; and

$\%O_2$ = oxygen concentration measured on a dry basis, percent.

§60.2705 What are my operating parameter requirements?

(a) If you are using a wet scrubber to comply, you must:

(1) Establish the appropriate maximum and minimum site specific operating parameters indicated in table 3 of this subpart during the initial stack test; and

(2) Following the date on which the initial stack test is completed you must not operate the CISWI unit above any of the applicable maximum operating parameters or below any of the applicable minimum operating parameters listed in table 3 of this subpart. Parameters must be measured and calculated as 3-hour rolling averages (calculated each hour as the average of the previous 3 operating hours) at all times except during periods of startup, shutdown and malfunction. Operating parameter limits do not apply during stack tests.

(b) If you are using an air pollution control device other than a wet scrubber to comply with the emission limits under §60.2675, you must petition the Administrator for other site-specific operating parameters to be established during the initial stack test and continuously monitored thereafter. You must not conduct the initial stack test until after the petition has been approved by the Administrator.

§60.2710 How do I determine compliance?

(a) Compliance with the emission limits is determined

by the initial and the annual stack tests.

(b) Operation above the established maximum or below the established minimum operating parameter(s) constitutes a violation of established operating parameter requirements. Three-hour rolling average values are used to determine compliance unless a different averaging period is established under §60.2705(b).

§60.2715 May I conduct a repeat stack test to establish new operating parameters?

Yes. You may conduct a repeat stack test at any time to establish new values for the operating parameters. The Administrator may request a repeat stack test at any time.

MODEL RULE - MONITORING

§60.2720 What monitoring equipment must I install and what parameters must I monitor?

(a) You must install, calibrate (to manufacturers' specifications), maintain, and operate devices (or establish methods) for monitoring the applicable maximum and minimum operating parameters listed in table 3 of this subpart. These devices (or methods) must measure and record values for these operating parameters at the frequencies indicated in table 3 of this subpart at all times except during periods of startup, shutdown, and malfunction.

(b) You must also install, calibrate (to manufacturers'

specifications), maintain, and operate a device or establish a procedure for measuring the use of the bypass stack including date, time, and duration.

(c) If you are using something other than a wet scrubber to comply with the emission limits under §60.2675, you must install, calibrate (to the manufacturers' specifications), maintain, and operate the equipment necessary to monitor the site-specific operating parameters established using the procedures in §60.2705(b).

§60.2725 Is there a minimum amount of monitoring data I must obtain?

Yes. You must obtain monitoring data at all times during CISWI unit operation except as required in §60.2720 or during periods of monitoring equipment malfunction, calibration, or repair. At a minimum, valid monitoring data must be obtained for 75 percent of the CISWI unit operating hours, per calendar day, for 90 percent of the CISWI unit operating days, per calendar quarter, that the CISWI unit is burning solid waste.

MODEL RULE - RECORDKEEPING AND REPORTING

§60.2730 What records must I keep?

You must maintain the following information (as applicable) for a period of at least 5 years:

(a) Calendar date of each record.

(b) Records of the following data:

(1) CISWI unit charge dates, times, weights, and hourly charge rates.

(2) Liquor flow rate to the wet scrubber inlet during each minute of operation, as applicable.

(3) Horsepower or amperage to the wet scrubber during each minute of operation, as applicable.

(4) Pressure drop across the wet scrubber system during each minute of operation, as applicable.

(5) Liquor pH as introduced to the wet scrubber during each minute of operation, as applicable.

(6) Records indicating use of the bypass stack, including dates, times, durations, reasons, and corrective actions taken.

(7) For affected CISWI units that establish operating parameters for controls other than wet scrubbers under §60.2705(b), you must maintain all operating parameter data collected.

(c) Identification of calendar dates for which the minimum amount of data on operating parameters specified under paragraph (b) of this section have not been obtained. The minimum amount of data is specified in §60.2725. Identify the operating parameters not measured, reasons for not obtaining the data, and a description of corrective

actions taken.

(d) Identification of calendar dates, times, and durations of malfunctions, and a description of the malfunction and the corrective action taken.

(e) Identification of calendar dates for which data on operating parameters specified under paragraph (b) of this section exceeded the applicable limits, with a description of the exceedances, reasons for such exceedances, and a description of corrective actions taken. Three-hour rolling average values must be used to determine operating parameter exceedances, unless a different averaging period is established under §60.2705(b).

(f) The results of the initial, annual, and any subsequent stack tests conducted to determine compliance with the emission limits and/or to establish operating parameters, as applicable. Retain a copy of the complete test report including calculations.

(g) Records showing the names of CISWI unit operators who have completed review of the information in §60.2660(a) as required by §60.2660(b), including the date of the initial review and all subsequent annual reviews.

(h) Records showing the names of the CISWI operators who have completed the operator training requirements under §60.2635, including documentation of training and the dates of the training.

(i) Records showing the names of the CISWI operators who have met the criteria for qualification under §60.2645 and the dates of their qualification, and all subsequent renewals of such qualifications.

(j) Records of calibration of any monitoring devices as required under §60.2720.

(k) Equipment vendor specifications and related operation and maintenance requirements for the incinerator, emission controls, and monitoring equipment.

§60.2735 Where must I keep my records?

All records must be maintained onsite in either paper copy or computer-readable format that can be printed upon request, unless an alternative format is approved by the Administrator.

§60.2737 When must I submit my waste management plan?

You must submit the waste management plan no later than the date specified in table 1 for submittal of the final control plan.

§60.2740 What information must I submit following my initial stack test?

You must submit the information specified in paragraphs (a) and (b) of this section no later than 60 days following the initial stack test. All reports must be signed by the facilities manager.

(a) The complete test report for the initial stack

test results obtained under §60.2700, as applicable.

(b) The values for the site-specific operating parameters established in §60.2705.

§60.2745 When must I submit my annual report?

You must submit an annual report no later than 12 months following the submission of the information in §60.2740. You must submit subsequent reports no more than 12 months following the previous report. (Once the unit is subject to permitting requirements under title V of the Clean Air Act, you may be required by the permit to submit these reports semiannually.)

§60.2750 What information must I include in my annual report?

The annual report required under §60.2745 must include the information specified in paragraphs (a) through (f) of this section. All reports must be signed by the facility manager.

(a) The values for the site-specific operating parameters established pursuant to §60.2705.

(b) The highest maximum operating parameter and the lowest minimum operating parameter, as applicable, for each operating parameter recorded for the calendar year being reported.

(c) Information recorded under §60.2730 (c) through (e) for the calendar year being reported. If no exceedances

or malfunctions were reported, a statement that no exceedances occurred during the reporting period.

(d) If a stack test was conducted during the reporting period, the results of that test.

(e) Any use of the bypass stack, the duration, reason for bypass, and corrective action taken.

(f) Documentation of periods when all qualified CISWI unit operators were unavailable for more than 8 hours.

§60.2755 What else must I report if I am out-of-compliance with these standards?

You must submit a report if any recorded 3-hour average parameter level is above the maximum value or below the minimum value established under this subpart, or if a stack test was conducted that exceeded the emission limit.

§60.2760 If an out-of-compliance report is required, when must I submit it?

If you are required to submit a report under §60.2195:

(a) For data collected during the first half of a calendar year (January 1 to June 30), submit your report by August 1 of that year.

(b) For data you collected during the second half of the calendar year (July 1 to December 31), submit the report by February 1 of the following year.

§60.2765 What must I include in the out-of-compliance reports?

In each report required under §60.2755, for any pollutant or parameter that exceeded the limits specified in this subpart, include the following information:

- (a) The calendar date your unit exceeded the limits.
- (b) The averaged and recorded data for that date.
- (c) The reasons for exceeding the limits and your corrective actions.
- (d) A copy of the operating parameter monitoring data and any test report that documents the emission levels.

§60.2770 Are there any other notifications or reports that I must submit?

- (a) You must submit notifications as provided by §60.7.
- (b) If all qualified operators are unavailable for more than 2 weeks, you must submit a notification within 10 days. In addition, you must submit a status report and corrective action summary to the Administrator every 4 weeks.
- (c) You must submit notifications of increments of progress, as described in §§60.2585 through 60.2605.

§60.2775 In what form can I submit my reports?

Submit initial, annual and semiannual electronic or

paper reports, postmarked on or before the submittal dates.

60.2780 Can reporting dates be changed?

If the Administrator agrees, you may change the

semiannual or annual reporting dates. See §60.19(c) for procedures to seek approval to change your reporting date.

**MODEL RULE - AIR CURTAIN INCINERATORS THAT BURN 100 PERCENT
WOOD WASTES AND CLEAN LUMBER**

§60.2785 What is an air curtain incinerator?

An air curtain incinerator operates by forcefully projecting a curtain of air across an open chamber or open pit in which combustion occurs. Incinerators of this type can be constructed above or below ground and with or without refractory walls and floor. (Air curtain incinerators are not to be confused with conventional combustion devices with enclosed fireboxes and controlled air technology such as mass burn, modular, and fluidized bed combustors.)

§60.2790 What are my requirements for meeting increments of progress and achieving final compliance?

If you plan to achieve compliance more than 1 year following the effective date of State plan approval, you must meet two increments of progress:

- (a) Submit a final control plan.
- (b) Achieve final compliance.

§60.2795 When must I complete each increment of progress?

Table 1 of this subpart specifies compliance dates for each of the increments of progress.

§60.2800 What must I include in the notifications of

achievement of increments of progress?

Your notification of achievement of increments of progress must include three items:

(a) Notification that the increment of progress has been achieved.

(b) Any items required to be submitted with each increment of progress (see §60.2815).

(c) Signature of the owner or operator of the incinerator.

§60.2805 When must I submit the notifications of achievement of increments of progress?

Notifications for achieving increments of progress must be postmarked no later than 10 business days after the compliance date for the increment.

§60.2810 What if I do not meet an increment of progress?

If you fail to meet an increment of progress, you must submit a notification to the Administrator postmarked within 10 business days after the date for that increment of progress in table 1 of this subpart. You must inform the Administrator that you did not meet the increment, and you must continue to submit reports each subsequent calendar month until the increment of progress is met.

§60.2815 How do I comply with the increment of progress for submittal of a control plan?

For your control plan increment of progress, you must

satisfy two requirements:

(a) Submit the final control plan, including a description of any devices for air pollution control and any process changes that you will use to comply with the emission limits and other requirements of this subpart.

(b) Maintain an onsite copy of the final control plan.

§60.2820 How do I comply with the increment of progress for achieving final compliance?

For the final compliance increment of progress, you must complete all process changes and retrofit construction of control devices, as specified in the final control plan, so that, if the affected incinerator is brought online, all necessary process changes and air pollution control devices would operate as designed.

§60.2825 What must I do if I close my air curtain incinerator and then restart it?

(a) If you close your incinerator but will reopen it prior to the final compliance date in your State plan, you must meet the increments of progress specified in §60.2790.

(b) If you close your incinerator but will restart it after your final compliance date, you must complete emission control retrofits and meet the emission limits on the date your incinerator restarts operation.

§60.2830 What must I do if I plan to permanently close my air curtain incinerator and not restart it?

If you plan to close your incinerator rather than comply with the State plan, submit a closure notification, including the date of closure, to the Administrator by the date your final control plan is due.

§60.2835 What are the emission limits for air curtain incinerators that burn 100 percent wood wastes and clean lumber?

(a) After the date the initial stack test is required or completed (whichever is earlier), you must meet the following limits.

(1) The opacity limit is 10 percent (6-minute average).

(2) The opacity limit is 35 percent (6-minute average) during the startup period that is within the first 30 minutes of operation.

(b) Except during malfunctions, the requirements of this subpart apply at all times, and each malfunction must not exceed 3 hours.

§60.2840 How must I monitor opacity for air curtain incinerators that burn 100 percent wood wastes and clean lumber?

(a) Use Method 9 of Appendix A of this part to determine compliance with the opacity limit.

(b) Conduct an initial test for opacity as specified in §60.8 no later than 180 days after your final compliance

date.

(c) After the initial test for opacity, conduct annual tests no more than 12 calendar months following the date of your previous test.

§60.2845 What are the recordkeeping and reporting requirements for air curtain incinerators that burn 100 percent wood wastes and clean lumber?

(a) Keep records of results of all initial and annual opacity tests onsite in either paper copy or electronic format, unless the Administrator approves another format, for at least 5 years.

(b) Make all records available for submittal to the Administrator or for an inspector's onsite review.

(c) Submit an initial report no later than 60 days following the initial opacity test that includes:

(1) The types of materials you plan to combust in your air curtain incinerator.

(2) The results (each 6-minute average) of the initial opacity tests.

(d) Submit annual opacity test results within 12 months following the previous report.

(e) Submit initial and annual opacity test reports as electronic or paper copy on or before the applicable submittal date and keep a copy onsite for a period of 5 years.

DEFINITIONS§60.2850 What definitions must I know?

Terms used but not defined in this subpart are defined in the Clean Air Act and subparts A and B of this part.

Administrator means the Administrator of the U.S. Environmental Protection Agency or his/her authorized representative or Administrator of a State Air Pollution Control Agency, if delegated by EPA.

Agricultural waste means vegetative agricultural materials such as nut and grain hulls and chaff (e.g., almond, walnut, peanut, rice, and wheat), bagasse, orchard prunings, corn stalks, coffee bean hulls and grounds, and other vegetative waste materials generated as a result of agricultural operations.

Air curtain incinerator means an incinerator that operates by forcefully projecting a curtain of air across an open chamber or pit in which combustion occurs.

Incinerators of this type can be constructed above or below ground and with or without refractory walls and floor. (Air curtain incinerators are not to be confused with conventional combustion devices with enclosed fireboxes and controlled air technology such as mass burn, modular, and fluidized bed combustors.)

Biomass fuel means untreated wood and wood products

(e.g., trees, tree stumps, tree limbs, bark, lumber, sawdust, sanderdust, chips, scraps, slabs, millings, and shavings); vegetative agricultural and silvicultural materials, such as logging residues (slash), nut and grain hulls and chaff (e.g., almond, walnut, peanut, rice, and wheat), bagasse, orchard prunings, corn stalks, coffee bean hulls and grounds; and alcohol fuels derived from these materials. Biomass does not include: painted, pigment-stained, or pressure-treated materials (e.g., telephone poles and railroad ties); sewage sludge, paper mill sludge, fermentation tank bottoms, or other sludges; or construction, renovation, and demolition wastes. Pressure treating compounds include, but are not limited to, chromate copper arsenate, pentachlorophenol, and creosote.

Calendar quarter means three consecutive months (nonoverlapping) beginning on: January 1, April 1, July 1, or October 1.

Calendar year means 365 consecutive days starting on January 1 and ending on December 31.

Clean lumber means wood or wood products that have been cut or shaped and include wet, air-dried, and kiln-dried wood products. Clean lumber does not include wood products that have been painted, pigment-stained, or pressure-treated by compounds such as chromate copper arsenate, pentachlorophenol, and creosote.

Clean wood means untreated wood or untreated wood products including clean lumber, tree stumps (whole or chipped), and tree limbs (whole or chipped). Clean wood does not include two items:

(1) Yard waste, which is defined elsewhere in this section.

(2) Construction, renovation, or demolition wastes.

Coal means all solid fuels classified as anthracite, bituminous, subbituminous, or lignite by the American Society of Testing and Materials in ASTM D388-77, Standard Specification for Classification of Coals by Rank (see §60.17), coal refuse, and petroleum coke. Synthetic fuels derived from coal for the purpose of creating useful heat, including but not limited to solvent-refined coal, gasified coal, coal-oil mixtures, and coal-water mixtures, are included in this definition for the purposes of this subpart.

Coal refuse means any by-product of coal mining or coal cleaning operations with an ash content greater than 50 percent (by weight) and a heating value less than 13,900 kilojoules per kilogram (6,000 Btu per pound) on a dry basis.

Commercial and industrial solid waste incineration (CISWI) unit means an enclosed device using controlled flame combustion that burns solid waste or an air curtain

incinerator that burns solid waste, and that is a distinct operating unit of any commercial or industrial facility. This definition includes field-erected, modular, and custom built incineration units (starved- or excess-air), and air curtain incinerators. The boundaries of a CISWI unit are defined as follows. The CISWI unit includes, but is not limited to, the commercial or industrial solid waste fuel feed system, grate system, flue gas system, and bottom ash. The CISWI unit does not include air pollution control equipment or the stack. The CISWI unit boundary starts at the commercial and industrial solid waste hopper (if applicable) and extends through two areas:

(1) The combustion unit flue gas system, which ends immediately after the last combustion chamber.

(2) The combustion unit bottom ash system, which ends at the truck loading station or similar equipment that transfers the ash to final disposal. It includes all ash handling systems connected to the bottom ash handling system.

Dioxins/furans means tetra- through octachlorinated dibenzo-p-dioxins and dibenzofurans.

Malfunction means any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner. Failures that are caused, in part,

by poor maintenance or careless operation are not malfunctions.

Modification or modified CISWI unit means a CISWI unit you have changed later than 6 months after promulgation of this subpart and that meets one of two criteria:

(1) The cumulative cost of the changes over the life of the unit exceeds 50 percent of the original cost of building and installing the CISWI unit (not including the cost of land) updated to current costs (current dollars). To determine what systems are within the boundary of the CISWI unit used to calculate these costs, see the definition of CISWI unit.

(2) Any physical change in the CISWI unit or change in the method of operating it that increases the amount of any air pollutant emitted for which section 129 or section 111 of the Clean Air Act has established standards.

Natural gas means:

(1) A naturally occurring mixture of hydrocarbon and nonhydrocarbon gases found in geologic formations beneath the earth's surface, of which the principal constituent is methane.

(2) Liquid petroleum gas, as defined by the American Society of Testing and Materials in ASTM D1835-82, Standard Specification for Liquid Petroleum Gases (see §60.17).

Oil means crude oil or petroleum or a liquid or gaseous

fuel derived from crude oil or petroleum, including distillate oil (Nos. 1-4) and residual oil (Nos. 5 and 6).

Particulate matter means total particulate matter emitted from CISWI units as measured by Method 5 or Method 29 of Appendix A of this part.

Pathological waste means waste material consisting of only human or animal remains, anatomical parts, and/or tissue, the bags/containers used to collect and transport the waste material, and animal bedding (if applicable).

Reconstruction means rebuilding a CISWI unit and meeting two criteria:

(1) The reconstruction begins 6 months or more after promulgation of this subpart.

(2) The cumulative cost of the construction over the life of the incineration unit exceeds 50 percent of the original cost of building and installing the CISWI unit (not including land) updated to current costs (current dollars). To determine what systems are within the boundary of the CISWI unit used to calculate these costs, see the definition of CISWI unit.

Refuse-derived fuel means a type of municipal solid waste produced by processing municipal solid waste through shredding and size classification. This includes all classes of refuse-derived fuel including two fuels:

(1) Low-density fluff refuse-derived fuel through

densified refuse-derived fuel.

(2) Pelletized refuse-derived fuel.

Shutdown means the period of time after all waste has been combusted in the primary chamber.

Solid waste means, for the purpose of this subpart only, any solid, liquid, semisolid, or contained gaseous material, which is combusted, including but not limited to materials listed in paragraph (1) of this definition. Solid waste excludes fuels defined in paragraph (2) of this definition and materials specifically listed in paragraph (3) of this definition.

(1) The following materials are solid wastes, regardless of the provisions in paragraph (2) of this definition:

(i) Any material that is combusted without energy recovery (i.e., where the material displaces other fuels to produce useful heat), except as provided in paragraph (3) of this definition.

(ii) Municipal solid waste, as defined in 40 CFR part 60, subpart Ea, subpart Eb, subpart AAAA and subpart BBBB.

(iii) Hospital waste, as defined in 40 CFR part 60, subpart Ec.

(iv) Medical/infectious waste, as defined in 40 CFR part 60, subpart Ec.

(v) Resource Conservation and Recovery Act hazardous

wastes, as defined in 40 CFR part 261.

(2) The following materials are fuels when combusted in a device that incorporates energy recovery as part of its integral design (e.g., for the production of hot water or steam). The combustion chamber and the energy recovery system must be physically formed into one manufactured or assembled unit. A unit in which the combustion chamber and the energy recovery system are joined only by ducts or connections carrying flue gas is not integrally designed.

(i) Biomass fuel, coal, natural gas, and oil, as defined elsewhere in this section.

(ii) Materials that have a heat content of 5,000 Btu/lb or more as fired. This criterion applies to each individual feed stream into the furnace.

(3) The following materials are not solid waste when combusted for the primary purpose of recovering chemical constituents: pulping liquors (i.e., black liquor) that are reclaimed in a pulping liquor recovery process and reused in the pulping process; spent sulfuric acid used to produce virgin sulfuric acid; and wood and coal feedstock for the production of charcoal.

Standard conditions, when referring to units of measure, means a temperature of 68°F (20°C) and a pressure of 1 atmosphere (101.3 kilopascals).

Startup period means the period of time between the

activation of the system and the first charge to the unit.

Total mass dioxins/furans or total mass means the total mass of tetra- through octachlorinated dibenzo-p-dioxins and dibenzofurans as determined using Method 23.

Wet scrubber means an add-on air pollution control device that utilizes an alkaline scrubbing liquor to collect particulate matter (including nonvaporous metals and condensed organics) and/or to absorb and neutralize acid gases.

Yard waste means grass, grass clippings, bushes, shrubs, and clippings from bushes and shrubs. It comes from residential, commercial/retail, institutional, or industrial sources as part of maintaining yards or other private or public lands. Yard waste does not include:

- (1) Construction, renovation, and demolition wastes.
- (2) Clean wood, which is defined elsewhere in this section.

Table 1 of Subpart DDDD – Model Rule – Increments of Progress and Compliance Schedules

Comply with these increments of progress	By these dates ^a
Increment 1- Submit final control plan	(Dates to be specified in State plan)
Increment 2 - Final compliance	(Dates to be specified in State plan) ^b

^a Site-specific schedules can be used at the discretion of the State.

^b The date can be no later than 3 years after the effective date of State plan approval or 5 years after promulgation of this subpart, whichever is sooner.

Table 2 of Subpart DDDD – Emission Limits for New Sources

	You must meet these emission limits^a	Using these averaging times	And determining compliance using these methods
Cadmium	0.03 milligrams per dry standard cubic meter	3-run average (run duration specified in test method)	Stack test (Method 29 of appendix A of this part)
Carbon monoxide	157 parts per million by dry volume	Not applicable	Not required
Dioxins/furans (total mass basis)	0.37 nanograms per dry standard cubic meter	3-run average (run duration specified in test method)	Stack test (Method 23 of appendix A of this part)
Hydrogen chloride	62 parts per million by dry volume	3-run average (run duration specified in test method)	Stack test (Method 26 of appendix A of this part)
Lead	2.1 milligrams per dry standard cubic meter	3-run average (run duration specified in test method)	Stack test (Method 29 of appendix A of this part)
Mercury	0.005 milligrams per dry standard cubic meter	3-run average (run duration specified in test method)	Stack test (Method 29 of appendix A of this part)
Opacity	10 percent	6-minute averages	Stack test (Method 9 of appendix A of this part)
Oxides of Nitrogen	388 parts per million by dry volume	Not applicable	Not required
Particulate matter	70 milligrams per dry standard cubic meter	3-run average (run duration specified in test method)	Stack test (Method 5 or 29 of appendix A of this part)
Sulfur dioxide	20 parts per million by dry volume	3-run average (run duration specified in test method)	Stack test (Method 6 of appendix A of this part)

^aAll emission limits are measured at 7 percent oxygen, dry basis at standard conditions.

Table 3 of Subpart DDDD – Operating Parameters to be Monitored and Minimum Recording Frequencies for Wet Scrubbers

You must monitor these operating parameters	Using these minimum frequencies		
	Data measurement	Data recording	Averaging time
Maximum operating parameters			
Maximum charge rate	continuous	every hour	3-hour rolling
Minimum operating parameters			
Minimum pressure drop across the wet scrubber, or minimum horsepower or amperage to wet scrubber	continuous	every minute	3-hour rolling
Minimum scrubber liquor flow rate	continuous	every minute	3-hour rolling
Minimum scrubber liquor pH	continuous	every minute	3-hour rolling